UNIT: 01
INTERIOR DECORATION

Structure

1.1 INTRODUCTION

A interior design describes a group of various yet related projects that involve turning an interior space into an effective setting for the range of human activities that are to take place there It is the arrangement of line, direction, form, shape, colour, and texture and arranging them aesthetically and tastefully. Interior decoration is the art of creating a pleasant atmosphere in the living room with the addition of a complex of furnishings, art, and crafts, appropriately combined to achieve a planned result or design. These arts and crafts have to be well maintained by the housekeeping department. Decorating flowers is a creative and stimulating art which often carries a message or theme. Flowers and indoor plants add colour and beauty to a room.

It is of two types:-

- **Structural design**
- **Decorative design**

Structural design is suitable to the purpose for which the objects are made. All objects have structural design. It must fulfil the following requirements:

- Design must be suited to its purpose
- It must have correct proportions
- It must be simple
- The material used must be suitable to its purpose.

Decorative design makes the structural design more beautiful .A design added to increase the beauty of an article is called decorative design. It requires:

- Decoration must be used in moderation
- It should be placed at structural points to strengthen the shape of the object
- It should enrich and not interfere with the structural design.

A design should not only be beautiful but also have individuality, character, style and utility e.g.-chair.

1.2 OBJECTIVES

After going through this unit, you will be able to:

- Understand interior designing
- Know the basic principles of interior designing.
- Understand and apply the various elements of designing.
- Appreciate the importance of flower arrangements in enhancing the beauty of a hotel's room and public area.
- Know the basic ingredients required for making an aesthetic floral arrangement
- Select the best cut flowers and undertake their care and conditioning, before arranging them
- Classify arrangements by different aesthetic styles
- Understand the principles to make the flower arrangement
- List the common flowers and foliage species used for floral arrangement

1.3 PRINCIPLES OF DESIGN

The elements of art are line, form, colour and texture. This must be handled within conformity with certain principles and laws that govern their use if beauty is to result. Every art field has certain guidelines that are to be followed and the same is applicable in planning of interiors.

1.3.2 Scale and proportion

By habit, the human eye becomes accustomed to definite dimensions in daily life. Some of these dimensions are fixed for convenience. Proportion is the law of relationship, which demands that all space divisions should be pleasingly related to each other and to the whole. The Greeks developed a great deal of calculations about space distribution and a scale of space relationships. These skills are used even today. The normal ratios are 2:3, 3:5 and 5:8. These forms are equal divisions. A square room is more difficult to arrange and uninteresting to live in. Rooms should be preferably furnished with smaller furniture types and consistent patterns. The furniture should be in proportion to the size and height of the room and its architectural features.

1.3.3 Balance

It is the principle of design, which produces a feeling of restfulness and contentment. Balance deals with quantity or number in the arrangement, colour and distribution of pattern or plain surfaces. Balance is the result of equalisation of attraction on either side of a central point. Balance can be attributed to colours, texture, pattern and light. There are two types of balance:

- Formal Balance
- Informal Balance

Formal Balance: Formal or symmetrical balance occurs when objects of equal size and weight are placed on each side and at equal distance from the centre. When they are identical, the balance is symmetrical.

Informal Balance: Informal or asymmetrical balance results when objects are arranged in such a way that a large one nears the centre, smaller ones away from the centre. Both types of balances are attractive. Formal represents intellect while informal represents feelings. This also has emotional significances.

1.3.4 Rhythm

This is the principle of design that suggests connected movement in a pleasant manner. It can be obtained through a repetition of light, forms, and colours or through a progression of rise or continuous line movement. Rhythm is achieved through repetition, progression, transition, opposition and radiation.

1.3.5 Emphasis

It is the principle of design that centres interest on the most important thing in the arrangement in a room. Emphasis may be centred on a painting, fireplace, window treatment or furniture grouping. All other parts must be subordinated to the interesting point. It is better to understand emphasised rather than over emphasized. Emphasis can be created at any point in the room. Dramatic use of art components creates emphasis i.e. Large and unusual forms, different surface patterns, more light elsewhere and unusual texture and contrasting colours.

CHECK YOUR PROGRESS-I

Q1. What is interior design?

Q2. Write a short account on Principles of Design.

1.4 ELEMENTS OF DESIGN

Design elements are the basic units of a visual image. These elements include: **The 3 f's (Form follows function)** is known as the 3 f's of Design. Form refers to what something looks like, and function refers to how it works.

1.4.1 Space

Space is the area provided for a particular purpose. It may have two dimensions (length and width, such as a floor, or it may have three dimensions (length, width, and height). Space includes the background, foreground and middle ground. Space refers to the distances or areas around, between or within components of a piece. There are two types of space: positive and negative space. Positive space refers to the space of a

shape representing the subject matter. Negative space refers to the space around and between the subject matter.

1.4.2 Line

Line is the basic element that refers to the continuous movement of a point along a surface, such as by a pencil or brush. The edges of shapes and forms also create lines. It is the basic component of a shape drawn on paper. Lines and curves are the basic building blocks of two dimensional shapes like a house's plan. Every line has length, thickness, and direction. There are curved, horizontal, vertical, diagonal, zigzag, wavy, parallel, dash, and dotted lines.

1.4.3 Colour

Colour is seen either by the way light reflects off a surface or in colours light sources. Colour and particularly contrasting colour is also used to draw the attention to a particular part of the image. There are primary colours, secondary colours, and tertiary colours. Complementary colours are colours that are opposite to each other on the colour wheel. Complementary colours are used to create contrast. Analogous colours are colours that are found side by side on the colour wheel. These can be used to create colour harmony. Monochromatic colours are tints and shades of one colour. Warm colours are a group of colours that consist of reds, yellows, and oranges. Cool colours are group of colours that consist of purples, greens, and blues.

1.4.4 Shape

A shape is defined as an area that stands out from the space next to or around it due to a defined or implied boundary, or because of differences of value, colour, or texture. They can be geometric or organic. Shapes in hotel decor and interior design can be used to add interest, style, theme to a design like a door. Shape in interior design depends on the function of the object like a kitchen cabinet door. Natural shapes forming patterns on wood or stone may help increase visual appeal in interior design. In a landscape, natural shapes, such as trees contrast with geometric such as houses.

1.4.5 Texture

Texture is perceived surface quality. In art, there are two types of texture: tactile and implied. Tactile texture (real texture) is the way the surface of an object actually feels. Examples of this include sandpaper, cotton balls, tree bark, puppy fur, etc. Implied texture is the way the surface of an object looks like it feels. The texture may look rough, fizzy, gritty, but cannot actually be felt. This type of texture is used by artists when drawing or painting.

1.4.6 Form

Form is any three dimensional object. Form can be measured, from top to bottom (height), side to side (width), and from back to front (depth). Form is also defined by light and dark. There are two types of form, geometric (man-made) and natural (organic form). Form may be created by the combining of two or more shapes. It may be enhanced by tone, texture and colour. It can be illustrated or constructed.

1.4.7 Value

Value is an element of art that refers to the relationship between light and dark on a surface or object and also helps with Form. It gives objects depth and perception. Value is also referred to as tone.

CHECK YOUR PROGRESS-II

Q1. What is interior design?

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Q2. Write a short account on Elements of Design.

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1.5 FLOWER ARRANGEMENT

Flower arrangement is a design of beauty. It is essentially a decorative piece and should be the centre of attraction. An arrangement can be composed of only flowers and or foliage or in combination with vegetables and fruits. Flower arrangements have an ability to introduce a personal touch in an otherwise staid and impersonal hotel room. Arrangements can be used in lobbies, restaurants, suites etc. Guests appreciate flowers for the freshness they bring to the surroundings. Arrangements need not be reserved only for parties or special occasions. They can be used regularly depending upon the season and the theme. Unconventional and dry material can also be used to make arrangements which are more economical and last longer. The role of flower arrangements in housekeeping is integral. The décor and ambience of a hotel defines its character. Flowers not only enhance the environment, they also make the guests feel better, happier and helpful. Flowers are widely used for interior decoration providing an aesthetic appeal to any environment. Flower arrangement is an art and it is widely used in hotels. Flower arrangement is the art of organizing and grouping together plant materials to achieve harmony of form, color, and texture. Flowers add beauty, life and happiness to the ambiance.

A flower arrangement is a decorative organization of flowers, which enhances the beauty and charm to any area. In a hotel, flowers are used extensively. There may be a large arrangement of flowers in the foyer and in lounges and restaurants, as well as smaller arrangements in the suites. Some hotels provide a bud vase in every room.
VIP rooms may even have more than one arrangement. It gives a personal touch to the guests, as these are natural and gives fresh environment to the room or other public areas. Various types of arrangements are chosen, as appropriate to the area and occasion. Medium-sized 'round' arrangements are often provided at the guest relations' executive's desk in the lobby and on coffee tables in the lounges. In most five star hotels, one can see huge, spectacular arrangements in the lobbies. Restaurants generally have bud vases on each table, with one or tow flowers in them. Table arrangements for conferences must be low so guests may see over them. At informal banquets, large arrangements may be seen. At wedding banquets, wall arrangements using gerberas are very popular now a days. On special occasions and festivals, a large amount of flowers is required for making up various types of arrangements – some hotels even make beautiful traditional flower carpets for the lobby.

Room attendants themselves can do simple arrangements such as a bud in a vase. Alternatively, flower arrangements may be provided on contract, in which case the arrangements are brought in and taken away at agreed times and little or no floral work is carried out on the premises. The staff of the flower room should be given training to make the variety of arrangements as one type of arrangement gives a monotonous look.

1.5.1 Principles of Flower Arrangement

The principles of design are applicable to flower arrangement as well. Design determines the structural pattern of the arrangement. It consists of the relationship between the flowers, foliage and containers. Any design can be produced i.e. suitable to the occasion and the surroundings. Design is determined by site of placement, function and materials available. Arrangements may have also to be two sided or all round.

Balance: Materials should be placed to give a feeling of stability. Form and colour are important aspects of balance.

a) **Formal balance or Symmetrical Balance:** In this type, both sides have equal material on either side of the central line. The flowers should have equal visual weight and colour.
b) **Informal or Asymmetrical Balance:** In this, two sides are not equal but still have equal visual weight. Dark colours give an effect of more weight than light colours. They should be centred low in the arrangement. Lighter colours give an impression of lightness and are more suitable towards the outer and upper ends of arrangement.

Scale: It means proportion and relationship of the various parts of the composition. The plant material has to be in proportion with the container used and the sealing of the plant items with each other must be kept in mind along with the site and function. A flower arrangement is of good proportion when it is of right side for the container and placement.

Rhythm: Rhythm can be described as a sense of movement, which flows through the main lines of the arrangement. The purpose of it is to direct once eyes along it so that the shape of the entire composition is followed and understood. In flower arrangement this is achieved by grading flowers and arranging foliage, leaning towards the sides. These lines partly decide the design of arrangement.

Focal Point: It is the central point of arrangement where emphasis is obtained by large accented flowers, group of flowers or use of darker colours.

Harmony and Unity: Ensure that the materials are suitable for the site and the occasion. The colours of the flowers and the container should blend with each other easily or provide a pleasing contrast with each other and with the background. Unity of materials is necessary to view the arrangement without any distraction from the main line of movement.

1.5.2 Basic Ingredients

The Basic ingredients required for flower arrangements are as under:

- Mechanics
- Equipment
- Containers
- Bases
- Accessories
- Plant material
- Support

Mechanics: These are items used to keep flowers, foliage, and stems in place within the container. Mechanics must be fixed securely and should be hidden from view.
Examples – florists' foam (oasis), pin holders (Japanese term – kenzan), chicken wire, prong, adhesive clay and tape, florist cone.

Floral foam, also called **oasis**, is a cellular plastic material, available in two types – green foam and brown/grey foam.

Pin-holders, also called **kenzan or needle-point holders**, is a series of sharply pointed pins are firmly held in a solid lead base, to hold thick and heavy stems securely by impaling them on the pins.

Chicken wire, also called **'wire mesh' or 'wire netting'**, is a fine- gauge wire used to cover floral foam blocks in large displays.

Prong is the simplest type of floral foam anchor. It is a small plastic disc with four vertical prongs. The base of the prong is attached to the container with adhesive clay and the floral foam is pressed down onto the prongs.

Florist's cone, also called a '**flower tube'** or '**flower funnel'**. It acts like a miniature vase. It is used in large arrangements, where foliage or flowers need to be placed above their stem height.

Equipment: This includes tools used to ensure t hat a satisfactory arrangement of plant material is created within the container.
Examples – bucket, scissors, knife, watering can, mister, wire cutter, cocktail sticks, turn, wire, floral tape, candle holder, cut flower preservatives, and secateurs.

Mister: It is a hand- held spray bottle to produce a fine mist of water droplets to keep an arrangement look fresh in warm weather.

Secateurs: They are used to cut through thick and woody stems
Cocktail sticks or a tooth pick: It is used to make holes in florists' foam for a soft stem of flower.

Cut-flower preservatives: It is a bactericide, available in powder or liquid form, to prevent slime and smell from developing in the vase water, plus sugar to prolong the life of fresh flowers. A preservative can be made in-house by adding 3 teaspoons of sugar and 1 drop of bleach to half a litre of water.

Containers: These are receptacles that hold the flower arrangement. They may or may not be hidden by the plant material. The container must be waterproof and neutral colours such as soft grey, dull brown, off-white, or earth colours are most suitable because they are inconspicuous and do not detract attention from flowers displayed. Theme and simplicity should be kept in mind while choosing the design of the container.
Example – vases and jugs, basket, bowls and trays, wreath frame etc.

Bases: An object that is placed underneath the container to protect the surface of the support and/or to add to the beauty of the display is called a base.
Example – table mat, tree section, wood base, stone base, and oriental base.

Support: This refers to the structure on which the container stands.
Example – tables, sideboards, alcoves, and shelves.

Other equipments: Florists tape, foam, water spray, rubber bands, tooth picks, thin wire, rocks, pebbles, accessories like birds, butter flies, figurines, sheds etc. A sink, running water and working surface with storage area must be provided.

1.5.3 Plant Materials

These can be divided into 3 basic types-

- Flowers (dominant/ focal/ point material)
- Fillers (secondary material)
- Foliages (line material)

Flowers (dominant/ focal/ point material) –This consists of bold flowers or clusters of small showy blooms. The dominant material provides a centre of interest.

Example – Gerbera, Chrysanthemum, lilies, Anthurium, Tulips, Poppies, Roses, Dahlias, and Daffodils.

Fillers (secondary material) –This consists of smaller flowers and all sorts of leaves and foliage that are used to cover the mechanics and edges of the container and also provide added interest and colour to the display.

Example – Asters, Ivy, Button Chrysanthemum, Carnations, Gypsophila (Baby's breath), Limonium and Marguerites.

Foliages (line material) –This consists of tall stems, flowering spikes, or bold leaves that are used to create the basic framework or skeleton. This line material may be straight or curved and it sets the height and width of the finished arrangement.

Examples – Gladioli, birds of paradise, golden rods, larkspur, asparagus ferns, palms, tuberoses, and Peruvian lilies.

Accessories: These are non-plant materials included in or placed alongside the arrangement. Their purpose in generally decorative but could be functional at times. Accessories are added to the design for extra interest or to 'stretch' the flowers when they are in short supply.

Example – miniature dolls, hats, ribbons, beads, painted wire, wooden fruit shapes, silk flowers and foliage, candles, driftwood, shells, idols, interesting pebbles etc.

1.5.4 Care and Conditioning of Flowers

A flower or leaf cut from a plant has a short, though beautiful, life. It is possible to prolong this for a little while by a few methods. Flower arrangers use the term '**conditioning**' to refer to the preparation of cut plant materials for a long life, the filling of stems with water, and prevention of wilting.

- A bucket of water at room temperature should be carried into the garden and the cut flowers should be immediately plunged into it. This helps retain their moisture for a longer period of time.
- Plant material should be cut at a slant, using sharp scissors or knife, either early in the morning or after sunset. At this time, they are crisp and filled with moisture.
- As a general rule, it is best to cut flowers before they reach maturity.
- Carry cut flowers in a heads-down position so that heavy-headed flowers will not snap off.
- Wrap the flowers in newspaper till the neck of the flowers. Plunge this bunch into a bucket of water for 3-4 hours or overnight to condition.

This is called '**hardening'**. In case of foliage, submerge them in water for about 2 hours.

- Use a good pruning knife or scissors to make clean, slanting cuts, causing minimal damage or bruising to the little ducts in the stem which carry water.
- Make slanting cuts in stems rather than straight ones – preferably underwater, as this helps expose a larger surface area for water suction by the stems.
- When stems are woody, they may be cut crushed or split at the end, e.g. cherry, etc.
- To revive wilting flowers, snip off half an inch of the stem underwater and plunge in a deep container of water. Dead flowers should be cut off.
- Re-cut any stem that has been left out of water, doing this underwater if possible and removing about 2 inches of the stem.
- To reduce underwater decay, strip the stems of all foliage and thorns that fall below the waterline
- Never place a fresh flower arrangement where it will be exposed to direct draughts from a fan or window. To prevent dehydration, keep cut flowers away from direct sunlight and large appliances as well.
- Do not put flowers near a bowl of citrus fruits as they emit ethylene gas when ripening, which causes wilting of flowers.
- Prolong the freshness of the arrangement by spraying with lukewarm water from a mister morning and night.
- Change the water everyday if the arrangement is meant to last a while. Never use chilled water, as cut stems fare best in warm water of about 45 degree Celsius.
- Listerine, ammonia, charcoal, salt, lemonade, sugar, camphor, aspirin added in small amounts to the water, or commercial cut-flower preservatives slows down bacterial growth, thus prolonging the life of flowers.
- Use clean containers to prevent premature fouling and bacterial growth. Do not use aluminium containers for flowers.
- Every 3 days, re-cut the stems, clean the vase, completely replace the water, and add more preservative.

1.5.5 Styles of Flower Arrangement

Flower arrangement is an attractive art form that is commonly used in hotels. Different arrangements are placed at different places, and according to the occasion. The following are some common styles of floral arrangements:

- **Based on angle**
  - ✓ All-round arrangements
  - ✓ Facing arrangement/ flat-back arrangement
- **Based on the space present in the arrangement**

- ✓ Mass style
- ✓ Line style
- ✓ Triangular shape
- ✓ Vertical line
- ✓ Line mass style
- ✓ Circular shape
- ✓ Crescent shape
- ✓ Fan shape
- ✓ Hogarth or 'S' shape

- **Ikebana (Japanese/ Oriental Flower Arrangement**
- **Ohara**
- **Miscellaneous Style**
  - ✓ Parallel style/ European style
  - ✓ Landscape style
  - ✓ Foliage arrangement
  - ✓ Dried flower arrangement

BASED ON ANGLE

All-round arrangements: This arrangement is designed to be seen from all sides and is therefore chosen for a table or a room centrepiece.

Facing arrangement/ flat-back arrangement: It is designed to be seen only from the front and perhaps from the sides. It is therefore chosen for placement on a shelf or sideboard.

BASED ON THE SPACE PRESENT IN THE ARRANGEMENT

Mass style- Little or no space is enclosed within the boundary of the arrangement. This style is originated in Europe.

Line style – In this style, open spaces within the boundary of the arrangement are the main feature. Most of the display is line material. The basic feature of a line design is limited use of plant material with support often provided by a pin holder.

Triangular shape- It is a popular shape for symmetrical arrangements. The first step is to establish lines of height and width, usually with flowers or foliage of finer form or paler colour. The next step is to establish a focal point of interest with large or darker-colored flowers. Fill in with flowers of varied stem lengths, grouping colours.

Left triangle- It is made in a shallow container with consecutive stem along the left side.

Right triangle- like the left triangle arrangement, but the tallest stem on the right side of the container with consecutive stem.

Vertical line- A very tall arrangement placed in long and cylindrical flower vase using a very long stemmed flower like torch lilies.

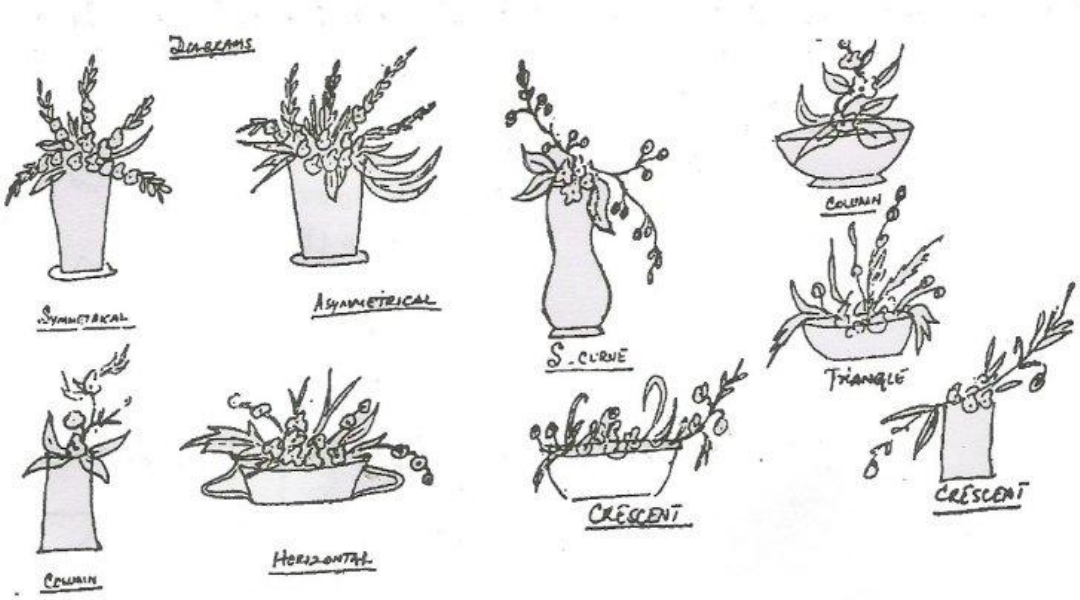
Line mass style - In this style, some open space is present within the boundary of the arrangement.

Circular shape - or round shape, is an arrangement in which flowers are arranged in circular designs.

Crescent shape- it is asymmetrical and formal arrangement which requires more skill and experience.

Fan shape- the fan or horizontal shape is a good line to follow when designing flowers for the centre of the table. It is a low arrangement, symmetrical and thus attractive from every angle.

Hogarth or 'S' shape - this style was pioneered by an 18th century painter, William Hogarth. This is a very graceful and easier to make arrangement when curved branches and pliable stems are used. After establishing the S shape with these, flowers are filled in at the centre and just above and below the rim of the tall container.



Different shapes of flower arrangement

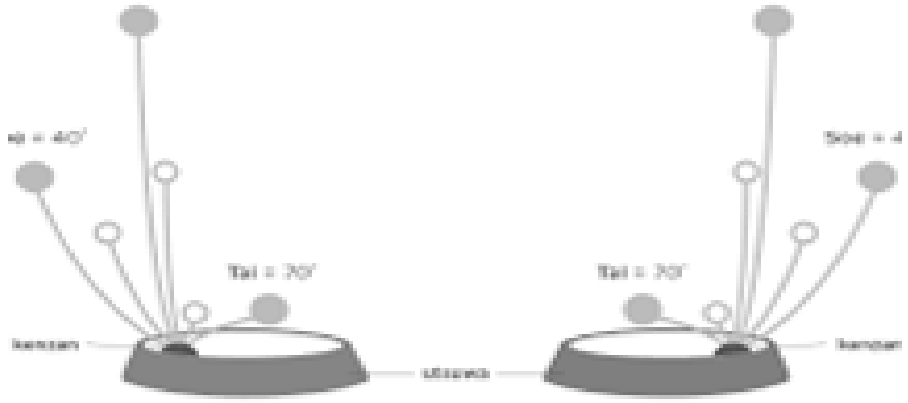
IKEBANA (Japanese/ Oriental flower arrangement): The word literally means '*making flowers live'* in Japanese. This Japanese style has been practiced for thousands of years. These arrangements are more than an aesthetic grouping of plant materials. They are symbolic representations of an ideal harmony that exists between earthly and eternal life. In each arrangement, there is an imaginary triangle. Its tallest line represents 'heaven'. Facing and looking towards heaven is 'man'. The lowest line, looking up to both, is 'earth'. In all such arrangements, Heaven, man and earth are represented by means of three main branches.

Shin*:* The main spray, is the tallest and symbolizes heaven; it ends to the central axis of the vase. This stem should be 1 1/2 to 2 1/2 times the height of the container.

See: The second highest stem represents man. It provides width to the arrangement and is about three-fourth the height of the tallest spray. This stem forms an angle of about 45 degree with the rim of the container.

Hikae: The lowest spray denotes earth. This branch is about half as tall as the one signifying man and extends very little beyond the diameter of the container, forming an angle of about 115 degrees with the rim of the container. It is placed opposite the branch signifying man and is used to balance the arrangement.

- The Japanese use tall vases as well as low bowls.
- They always use an odd number of flowers, as they believe that odd numbers are lucky as well as more aesthetic. Thus, in all arrangements, three, five, or seven flower sprays are used.
- There is no overcrowding and all the plant materials are seen as separate units, but as a part of the whole.
- There are various schools of oriental flower arrangement.



Ikebana style

OHARA School is the most popular one. In this school-

- When a flat or low container is used, it is called a ***moribana*** style. ***Moribana*** is an informal arrangement in a shallow container in which a pin-holder is used as mechanics. Landscapes are portrayed or large, colourful flowers are displayed.
- When a tall vase without a pin-holder is used, the arrangement is said to be in the ***hikae*** style.
- A formal arrangement, basically a triangular one is called the ***seika*** style which has strict rules governing the lengths and angles of the stems.
- A floating arrangement is called ***ukibana***.
- A basket arrangement is ***morimano***.
- A classical arrangement in a tall cylindrical vase with a flowing and natural effect is called ***nagerie***.

Miscellaneous style -

- Parallel style/ European style
- Landscape style
- Foliage arrangement
- Dried flower arrangement

Essentials in flower arrangement

1. A good design
2. Right shape
3. Colour of the container
4. Flower composition
5. Accessories in the arrangement

While starting the arrangement, make a definite mental plan. Design on the basic form in such a way that taller and wider material goes first in a definite leading line. Locate the focal point low and near the centre. Let the plant material partially cover the container. Avoid even number of flowers except in a formal arrangement. Keep the height of flowers 1/2 times the width of container. Place tall arrangements in tall containers but low containers can be used for both kinds of arrangements. Two items must never appear at the same height. Stems can be bent to obtain curves in the arrangement. Avoid crossing of stems and observe the reflection of the arrangement in a mirror.

1.5.6 Use of Dry Material in Flower Arrangement

A dry flower arrangement is a long lasting arrangement that is made by using dried flower material. Most dry material can be collected in autumn. Examples of the materials for such arrangements are stems of barley, oats, rice etc. Pine cones, wood roses, bull roses, onion seed heads, poppy seed heads, corn cobs, lichen, wired shaped roots, dried grass, feathers, sea weed, dried lotus, Cyprus palm etc. This material can be treated with a coat of varnish, paint or silver and gold wash. Accessories like marbles, coloured glass, bits of metals or strips of metal foil, dried berries, feathers, pebbles, drift wood, ribbons, thremocoal balls, candles, bells, glass balls can be used. Flower arrangement is a very old art. Making up of a good flower arrangement requires a lot of creativity and one can develop this art through study and experimentation with different plant materials.

Flower arrangement may be defined as the art of organizing and grouping together plant materials (flowers, foliage, twigs, etc.) to achieve harmony of form, colour, and texture, thereby adding cheer, life, and beauty to the surroundings.

Styles of flower arrangement on the basis of effect

- **Formal arrangement** –this is symmetrical and precise.
- **Semi-formal arrangement** – this is more or less symmetrical in outline, but not in the details of arrangement
- **Informal arrangement** – this is asymmetrical and 'free'.
- **Modern or abstract or free-style arrangement** – these have no fixed rules for correct proportions. These arrangements do not have a definite

geometric outline; instead the emphasis is on line and space. The individual beauty of each piece of plant material is emphasized instead of the beauty of an outline shape or a mass.

1.5.7 Common flowers and foliage

Some of the Common flowers and foliage used in flower arrangements are as under:

Flowers –

1. Roses
2. Arum lilies
3. Gladioli
4. Dahlias
5. Chrysanthemums
6. Gerberas
7. Tulips
8. Asters
9. Carnations
10. Freesias
11. Tuberoses
12. Lotuses
13. Anthurium
14. Birds of paradise
15. Marigold
16. Orchids
17. Petunias
18. Hibiscus
19. Poppies
20. Camellia
21. Peonies
22. Hydrangea
23. Snowdrops
24. Gypsophila (baby's breath)
25. Bottle brush
26. Hollyhocks
27. Geraniums
28. Daisies
29. Spider lilies
30. Water lilies

Foliage

1. True fern
2. Asparagus fern
3. Palm leave
4. Umbrella Palm
5. Goldenrod

6. Copper beech
7. Pine
8. Bamboo
9. Ivy
10. Boxwood

1.5.8 Flower Arrangements in Hotels

In hotels, flowers are used extensively. Various types of arrangements are chosen, as appropriate to the area and occasion. Medium-sized 'round' arrangements are often provided at the guest relations executives' desk in the lobby and on coffee tables in the lounges. In most five star hotels, one can see huge, spectacular arrangements in the lobbies. Restaurants generally have bud vases on each table, with one or two flowers in them. Table arrangements for conferences must be low so that guests may see over them. At informal banquets, large arrangements may be seen. At wedding banquets, wall arrangements using gerberas are very popular nowadays. On special occasions and festivals, some hotels even make beautiful traditional flower carpets for the lobby. Flowers are used for decorating various areas in the hotel like restaurants, reception area, lobby area, rooms etc. They provide a cheerful appearance and colour to the room. The arrangement should blend with the décor of the room. It should be suited to the occasion and location.

Arrangements for VIP Rooms: Arrangements here offer a great variety in design and imagination. The placement will vary according to the type of room and its décor. The writing table, bedside table or coffee table should be used for placing tall arrangements. The flowers used in rooms should not attract insects.

Flower arrangements for reception area: The reception desk is the first area that the guest comes in contact with. This desk becomes part of the lounge or lobby. Arrangements should lend character and cheerfulness to the surroundings. They should blend with the décor. Roses, tuberoses and gladioli, chrysanthemums, carnations etc are most suitable. The arrangement may be two-dimensional since it needs to be viewed by the guest.

Buffet Table: Flower arrangements on buffet table act as centrepieces and focus of attention. The basic rules of arrangements in dining area should be followed and a multi- tier arrangement of a combination with fruits and carved vegetables can be made. Flowers used should not have a strong smell. Theme arrangements can be made in theme restaurants.

Banquet Table: A banquet is a formal sit down service and the flower arrangement must also follow a formal pattern. The colour should blend harmoniously with the décor of the banquet hall. A table that is large with a seating capacity of 15-20 guests, should have at least 4-5 small arrangements. These should be low and all round. Flower arrangement for special banquets like wedding banquets or in honour of VIP guests should be formal and usually monochromatic.

Coffee Table: For a coffee table a low mass arrangement that can be viewed from all sides is suitable. Few large flowers combined with tiny blossoms are appropriate. Arrangements can be informal and relaxing.

CHECK YOUR PROGRESS-III

Q1. What is Flower Arrangement?

Q2. Write a short account on Styles of Flower Arrangement.

1.6 SUMMARY

Successful integration of interior design and decoration leads to achievement of the ultimate goals of beauty, expressiveness and functionalism in hotel design. Good taste is appreciated by all. In interior decoration, colour is an important tool, it can be used in various ways. Further, you have been introduced to flower arrangements and their role in housekeeping. Flower arrangements form an essential part of housekeeping. They not only aid in enhancing the décor of the establishment but also complement the ambience of the establishment. You have been introduced to various principles of floral art and design. There are several types of flower arrangements, each symbolizing a specific mood or theme. The basic principles of visual art constitute various elements including, colour, texture, shape, value of tone, volume of tone and space. Principles of art and composition include balance, variety, depth, repetition, colour saturation and overlapping. Conditioning plant material is required to maintain the quality and freshness of flowers. Principles of flower arrangement constitute form, harmony, accent, texture, contrast, space, light, scale and weight.

Various types of flower arrangements include circular arrangement, triangular arrangement, crescent arrangement, fan arrangement, hogarth or 'S' arrangement. Ikebana is a Japanese term, which means 'making flowers live'. This arrangement represents harmony between earthy and eternal life. It consists of three major stems depicting 'heaven', 'man' and 'earth' respectively; the whole universe and its relationship to each other. There are two fundamental styles of arrangement in ikebana, each having some guiding principles. T

he two styles are 'moribana' and 'nageire'. Other types of arrangement include horizontal arrangements, L-shaped arrangements, inverted T arrangement and dome arrangement. You also learnt about mass flowers, filler flowers and line flowers. Foliage constitutes an integral part of any flower arrangement. Various foliages include lamb's ear, magnolia leaf, song leaf, beargrass, fatsia leaf, eucalyptus, ruscus, philodendrons and japonica foliage.

1.7 GLOSSARY

- **Contrast-** Difference in colour and light between parts of an image is called contrast.
- **Crease** A line made by pressing, folding, or wrinkling.
- **Dome arrangement:** An arrangement that is round with an equal distribution of flowers.
- **Emphasis by contrast:** Using objects of contrasting characteristics.
- **Emphasis by isolation:** Achieving emphasis in a design of grouped objects by isolating the object of attention and placing it at a distance from the group.
- **Emphasis by placement**: The focal point can be emphasized by placing it at the centre of the design.

- **Flower bloom/blossom**: full open stage of a flower or plant.
- **Flower bud**: half or not opened stage of a flower.
- **Foliage:** green or brown leafy material used in a flower arrangement.
- **Horizontal arrangement:** A low arrangement in which the length is usually two times the height.
- **Ikebana:** The Japanese art of arranging flowers in a formal balanced composition.
- **Inverted T arrangement:** An arrangement in the shape of the letter T, but upside down. It looks like a triangular arrangement but slightly different.
- **L- shaped arrangement:** An arrangement shaped according to the letter L.
- **Latex:** It is a colloidal suspension of very small polymer particles in water and is used to make rubber.
- **Line flowers:** Flowers that define the shape of the arrangement, giving it height and width.
- **Mass flowers:** Flowers that form the centre of attention and the main focus of the arrangement.
- **Mattress:** A usually rectangular pad of heavy cloth filled with soft material or an arrangement of coiled springs, used as or on a bed.
- **Resilient:** Having the quality of springing back to a former position.
- **Searing**: it means drying up the leaves and flowers
- **Shearing:** cutting the stem or leaves of flowers.
- **Tints:** A light values that are made by mixing a colour with white.

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1.10 TERMINAL QUESTIONS

1. How does the location of a flower arrangement affect the 'principles of design'?
2. Define interior designing and interior decoration. What are their objectives?
3. Explain the use of elements of design in hotels.
4. Discuss the principles followed to achieve good interior design.
5. Explain the design features to be followed in flower arrangement
6. Describe the Japanese way of arranging flowers.
7. Explain the methods used to incorporate emphasis in a design.
8. 2. State the meaning and importance of floral art in hotels.
9. 3. Write a note on conditioning plant material.
10. 4. Explain the various types of flower arrangements.

UNIT: 02
COLOUR, LIGHTING AND FURNITURE

Structure

2.1 INTRODUCTION

Colour influences our moods and emotions and generally enhances the way in which we enjoy our surroundings. Our experience of colour emanates from a rich diversity of sources, both natural and synthetic. Natural colours are all around us, in the earth, the sky, the sea, animals and bird s and in the vegetation, for example in the trees, leaves, grass and flowers. Colour is an important aspect in our enjoyment of the food we eat. In fact, we frequently judge the quality of meat products, fruit and vegetables by the richness of their colour. In addition, there is a myriad of examples of synthetic colours, products of the chemical manufacturing industry, which we tend to take so much for granted these days. These colours commonly serve a purely decorative or aesthetic purpose.

Proper lighting heightens the beauty of a room and adds to guest comfort. Lighting can create a desired effect by flattering the occupant as well as the room furnishings. Lighting should never be an afterthought, but should be considered in the total design of the room. In many modern decors the source of lighting is concealed. Contemporary decors also use table, wall, and hanging lamps, which are securely fastened to the facility to reduce theft and avoid accidents. Table lamps should have their on/off switches located at their bases. This reduces the possibility of scorched fingers and the prospect of groping about in the dark for the switch. Floor lamps are seldom, if ever, used in modern hotel construction because of the space used and the tripping hazard created by unsightly cords.

Furniture refers to movable objects intended to support various human activities such as seating (e.g., chairs, stools, and sofas), eating tables and sleeping beds. Furniture is also used to hold objects at a convenient height for work (as horizontal surfaces above the ground, such as tables and writing desk, or to store things (e.g., cupboards and shelves). Furniture can be a product of design and is considered a form of decorative art. In addition to furniture's functional role, it can serve a symbolic or religious purpose. It can be made from many materials, including metal, plastic, and wood. Furniture can be made using a variety of woodworking joints which often reflect the local culture.

2.1 OBJECTIVES

After reading this unit the learner will be able to understand the following:

- Dimension of Colours
- Colour Scheme
- Emotional impact of colour

- Functional Consideration in Colour scheme
- Types of Lighting
- Consideration in Lighting Selection
- Methods of Lighting
- Lighting For Different Areas in Hotels
- Impact of Lighting on Mood and Atmosphere
- Selection of furniture
- Types of furniture
- Uses of wood in furniture making
- Protecting wood surfaces
- Cane, wicker and bamboo

2.3 COLOUR

Colour establishes an aesthetic connection between objects and set of mood. The study of colour may be approached from any of the five angles i.e physiologist, chemists, physicist and psychologists or people who works with pigments. Of the many theories of colour two are in common use. These are generally known as the Prang system and Munsell system.

2.3.1 Dimension of Colours

When the average person thinks of color, he or she usually considers the aesthetic aspects of color such as the shade and whether it's light or dark; or a cool or warm tone. There are three properties or qualities that develop the 3-dimensional color space concept- distint as the length, breath and thickness of an object.

Hue: Hue represents the color itself—red, yellow, blue, etc. If you were to take the visible spectrum—red, orange, yellow, blue, indigo and violet—and place each color in a circle. The colour of an object is determined by the wavelengths of the light reflect. An object appears black when all the wavelengths are absorbed and white when all reflected.

Value: It is the one dimension of color space that can stand alone. Value represents the lightness or darkness of a given hue the value ranges from 0 for pure black to 10 for pure white. In the absence of hue you would simply have black, white or shades of gray.

Tint is the term used to describe a hue that has been lighted in value from its normal value. Pink is tint of red. Tints are achieved by mixing white with a pigment or by using a pigment in a dilute form to allow for the white of the ground to show through.

Shade is the term used to describe a hue that has been darkened in value from its normal value. that your coat is not true blue but some blend of blue with other colors. Maroon is a shade of red. Shades are achieved by mixing black with a pigment.

NOTE This use of the term shade is specific to color theory. In common usage a "shade" is usually a variation in color of a hue. To say "your coat is a nice shade of blue" usually means

Intensity/Chrome: It refers to the purity of a hue and the brightness or dullness of a color Intensity is also known as **Chroma** or **Saturation**. The highest intensity or purity of a hue is the hue as it appears in the spectrum or on the color wheel. A hue reduced in intensity is called a **Tone**. A tone is a hue with reduced or dulled strength.

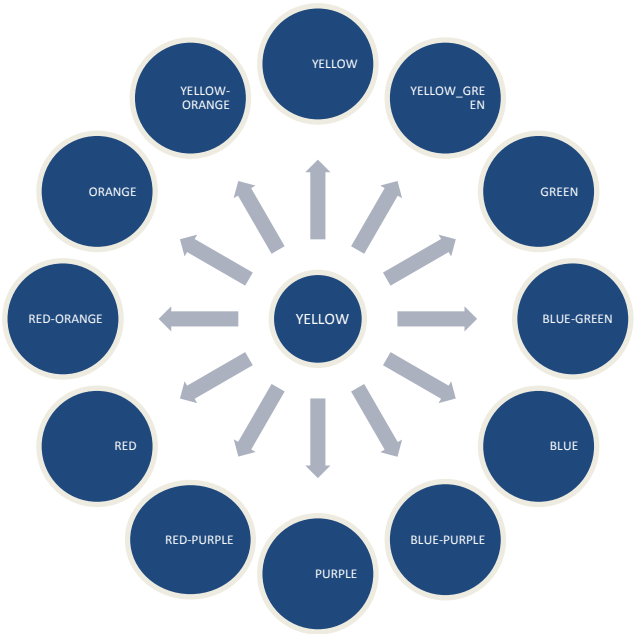
Dimension of Colours: There are following two dimensions of colour:

- Warm
- Cool Colors

Warm colors in the most general terms, are related to the *yellow/red* side of the **color wheel** chart. They attract attention and are generally perceived as energetic or exciting. ***Cool colors,*** on the other hand, sit on the *blue/green* side of the color wheel; they are generally perceived as soothing and calm.

2.3.2 Prangs' Colour Wheel

The 12-part colour wheel is based on the three **primary colours** (red, yellow and blue) placed evenly around a circle. Between the three primaries are the **secondary colours** (green, orange and violet), which are mixtures of the two primaries they sit between. The **tertiary colours** fall between each primary and secondary. Between yellow and orange, for example, is yellow orange; between blue and violet is blue violet and so on.All the colours around the outside of the colour wheel are called **saturated colours**. They contain no black, no white and none of their complimentary or opposite colour.



2.3.3 Munsell System

When the average person thinks of colour, he or she usually considers the aesthetic aspects of colour such as the shade and whether it's light or dark; or a cool or warm tone. However, A.H. Munsell saw colour in terms of its relationship to other colours, which led him to develop his 3-dimensional colour space concept. He described colour space using objects with which most people would be familiar, such as a "colour tree" to teach and communicate colour with greater understanding and clarity**.**

2.3.4 Colour Scheme

Colour is a very potent feature in interior design because it evokes almost immediate response from the eye and can produce both physical and psychological reaction. Designers can work wonders with colour and colour combinations if they have a good knowledge of colour and its effects. A good decorator always combines both value and practicality to evolve a scheme, which will work to the best advantage of the interiors. Standard colour harmonies are divided into two main groups:

- Similar or Related Harmonies
- Contrasting or Complimentary Harmony

2.3.4.1 Similar or Related Harmonies

Selecting colours that are close to each other on the colour wheel produces related harmony. This includes two types of schemes

- monochromatic
- and analogous schemes.

2.3.4.2 Monochromatic Harmony

Monochromatic harmony indicates the selection of one colour or hue. Different values must contrast in a single colour harmony. This scheme is quite safe, effective, and peaceful in small areas. However, tends to get tiresome and monotonous, if carried out in an entire room. Additional interest may be created by providing contrasts and combining textures through various surfaces.

2.3.4.3 Analogous Scheme

Analogous scheme is produced by a combination of adjacent hues that have one hue in common. The analogous are a combination of primary or secondary colours with two intermediate colours on either side of it. This scheme is quite restful and shows greater varieties.

2.3.4.4 Contrasting or Complimentary Harmony

Combining colours that are opposite to each other and far away on the colour wheel produces complimentary harmony. They should differ in value and intensity.
This group includes different types:

- Complimentary harmony
- Double complimentary harmony
- Split complimentary harmony
- Triad harmony

- Accented Neutral Harmony

2.3.4.5 Complimentary Harmony

Complimentary Harmony is obtained by using colours lying opposite each other on the colour wheel e.g. Blue and orange with yellow and violet etc. This type of harmony provides a richer effect of colour than related harmony. It can be successfully used for rooms, window displays and outdoors. It should have strong colour intensity.

2.3.4.6 Double Complimentary Harmony

Double Complimentary Harmony: In this scheme, two directly adjacent colours and their complimentary colours are used together for a double complimentary harmony e.g. Yellow and yellow green with red and red violet. In using this scheme, the outstanding view should contain the largest amount of colours, that is, the dullest of all the colours. The next may be a little bright but should be partially neutralised. The fourth colour, which is used in the least quantity, should have the brightest intensity.

2.3.4.7 Split Complimentary Harmony

Split Complimentary Harmony: It is the combination of primary or intermediate colours on either side of the colour wheel; compliment yellow with red violet and blue violet, blue with red orange and yellow orange, red with blue green and yellow green etc. A true split complimentary scheme is a harmony of similar colours with a note of contrasting colours. The amount of different values and intensities should be adjusted to prevent a shocking effect.

2.3.4.8 Triad Harmony

Triad Harmony: This is a combination of any three colours that form on equilateral triangle on the colour wheel. It requires careful treatment and can provide the richest and most interesting harmony. But if not carefully planned, it can have a very irritating effect e.g. Red yellow blue orange, violet & green and red violet blue green and yellow orange.

2.3.4.9 Accented Neutral Harmony

Accented Neutral Harmony: It is a harmony in which the largest area of the room will be neutralised with a smaller area in a brighter colour.

2.3.5 Emotional impact of colour

Colors and emotions are closely linked. Warm colors can evoke different emotions than cool colors and bright colors can create different feelings than muted colors. It all depends on how the psychological effects of color are being used. Every color creates different emotions and feelings. Colors can make us feel happy or sad, and they can make us feel hungry or relaxed. These reactions are rooted in psychological effects, biological conditioning and cultural imprinting.

2.3.5.1 How Colour Affects Mood

Relying strictly on the colour wheel to make decorating decisions leaves an important factor out of the equation: the moods that colours can create. The colours you live with really do influence your emotions. Some palates lighten and brighten your mood while others pacify or purify. We respond to colour with our hearts, not just our heads, so it's important to choose wisely. Understand that colours behave in three basic ways -- active, passive, and neutral -- and you can easily match every room's colours to your personal desires and taste and to the room's purpose.

2.3.5.2 Active Colours

On the warm side of the colour wheel, active colours include yellow, orange, and red. These advancing, extroverted hues stand out to greet and sometimes dominate. They inspire conversation and an upbeat attitude. Red, the most intense, pumps the adrenaline like no other hue. Small doses of the fire-engine hue wake up an entry or turn up the heat on a hearthside den. Golden or lemony yellows -- good for home offices and kitchens -- unleash creative juices.

2.3.5.3 Passive Colours

The cool colours -- blue, green, and purple -- will pacify, staying quietly in the background to calm and restore depleted spirits. They're ideal for bedrooms or private retreats, but if yours is a cold climate, you may want to work in some sunny accents for warmth and contrast.

2.3.5.4 Neutral Colours

Neutralizers are the "uncolors": browns, beiges, greys, whites, and taupe. They neither activate nor pacify but combine and cooperate, bridging together different rooms and colours. They're good transitions on woodwork, trim, hallways, and functional spaces like kitchens and baths, but even living rooms can benefit. Darker neutrals tone down other colours; crisp white intensifies them.

2.3.6 Colour Language

Curious about how colour influences mood? Here are a few examples:
Pink: soothes, acquiesces; promotes affability and affection.

Yellow: expands, cheers; increases energy. It is warm but not over bearing. Cream and light tans are suitable background colours.

White: purifies, energizes, unifies; in combination, enlivens all other colours.

Black: disciplines, authorizes, strengthens; encourages independence.

Orange: cheers, commands; stimulates appetites, conversation, and charity. Beige and tan are favoured as background colours.

Red: empowers, stimulates, dramatizes, competes; symbolizes passion. It is the strongest of colours and is associated with danger. When reduced to a tint of pink it losses its intensity and becomes milder and delicate. As a shade, red may give a warm brown.

Green: balances, normalizes, refreshes; encourages emotional growth. It is associated with nature, health and well-being. It provides dignity and solidity.

Purple: comforts, spiritualises; creates mystery and draws out intuition.

Blue: relaxes, refreshes, cools; produces tranquil feelings and peaceful moods. It is associated with simplicity, purity, truth and meditation. It stimulates intellectual activity but in the extreme, it could lead to depression.

Violet: **It is the colour of tension and ambiguity**. It represents sensitivity, subtlety and has lavender in playful and magical. Deep violet should be used with caution.

A combination of colours from the three families i.e. Warm, cool and neutral in a correct balance will provide attractive and comfortable interiors. Colours may also have an advancing or receding effect. Warm colours tend to appear closer than their actual distance while cool colours tend to have a receding effect. Spaces can be made to seem larger or smaller through choice of colours and shape. A long narrow space can be made to seem less long and less narrow through the use of warm colours on either ends and cool colours on the sides. A low ceiling will seem less oppressive in light colours where as a high ceiling will appear lower in dark tones.

2.3.7 Functional Consideration in Colour scheme

The function of the place should be manifested through the colour harmony. The maintenance availability and cost must be considered. Light colours are soiled easily and may prove to be more expensive in terms of time and money. In private areas, it is important to create a personalised colour atmosphere. In a room shared by many groups, preference should prevail, e.g. Restaurants, lobby and other public places. Sub divide a room into the following areas of colour distribution - dominant area (walls, floor and ceilings) medium area (draperies, upholstery, furniture and bed spreads), small furniture (cushions, pillows and table cloths), accent areas (accessories, paintings, lamp shades etc.)

According to the law of chromatic distribution, the largest area should be covered with a neutralised colour. As the area reduces in size, chromatic intensity may be proportionally increased. Any two hues may be used if they are at the proper degree of neutralisation. They should preferably contrast in their values, e.g. Like walls and dark floor where the draperies and upholstery are of an intermediate value.

Contrast creates interest; neutral colours are formal while brighter values are more informal. A neutralised colour appears more neutral in small areas than in larger areas.

Colours selection is influenced by climate, orientation activity and preference. In hotels, entrances, lobbies and front desk areas invite the use of strong colours to make a positive first impression. Lobbies and lounges can have warm colours to support comfort but cooler tones in warm climate. All the schemes should be generally agreeable to the guest. Corridors leading to guest room should be given a lively colour treatment. In bedrooms, intense colour must be avoided on ceilings and large wall areas. Restaurants may fail by using insensitivity to colour since appetite is influenced by light and colour. Black, grey, blue and violet should be avoided.

CHECK YOUR PROGRESS-I

Q1. Write a note on Colour Scheme.

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Q2. Write a short account on Emotional Impact of Colour.

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2.4 LIGHTING

Light is an essential element of every interior scheme and should be given special attention in the initial plan of each room. Sufficient and conveniently planned outlets should be an integral part of architectural planning. Planning of artificial light presents a major problem, as it requires both aesthetic and practical considerations.

The average room lighting equipments and fixtures must be consistent with the style of the décor and must consistently contribute to the character and atmosphere of the room.

2.4.1 Types of Lighting

There are two types of lighting:

- Natural
- Artificial

2.4.1.1 Natural

Day light provides natural light and varies according to the position of the sun and time of the day. Light is necessary for colour visibility. Textures are also influenced by light absorbed or reflected by them.

2.4.1.2 Artificial

These are of two types:

- Incandescent Lighting
- Fluorescent Lighting

Incandescent Lighting: In this type of lighting tungsten filament is sealed in a glass bulb and heated to a point at which it glows. The glass bulbs are usually made of standard lined glass/heat resistant borosilicate glass, which permits higher voltage used for outdoor lighting. Same bulbs are finished with an acid solution from inside which etches the glass and gives a frosted effect.

Fluorescent Lighting: This consists of sealed glass tubes, which contains mercury and halogen glass. It has electrodes at each end and on the inside, the tube is coated with a florescent material containing phosphorous. When a current is passed, the mercury vapour emits ultra violet light which is converted into visible light by the phosphorous on the inside surface of the tube. The lifespan of the incandescent lamp would be 750-2000 hrs and of a fluorescent light 1800-20000 hrs. Fluorescent lamps are suited for lower ceiling application and general lighting. They provide diffused light.

2.4.2 Consideration in Lighting Selection

Considerations in Lighting Selection are as under:

- Function
- Safety
- Beauty

Function: The function of lighting must be evaluated in terms of quantity and quality of vision. The primary goal is visual clarity and to safeguard guest.

Safety: Safety is important in light consideration since improper lighting could prove hazardous to persons working in a particular area. Staircases require adequate

lightings to prevent accidents. Proper wiring insulations and earthing should also be considered for safety.

Beauty: A close relationship exists between the type of lighting and appearance of colour. Wrong colour choices reduce the effectiveness of well-planned schemes. The designer should use brightness/ contrast to create visual interest. Interior lighting should be an integral part of the total designing of the area.

2.4.3 Methods of Lighting

There are two methods of Lighting:

- Architectural lighting
- Non Architectural Lighting

2.4.4 Architectural lighting

It supplies functional lighting and is good for contemporary rooms.

- **Valence Lighting:** A historical fluorescent tube is placed behind a valence board, carting up light which reflects and then down, shining on the drapery by providing both direct and indirect light.
- **Cornice Lighting:** A cornice is insulated in ceiling and directs the light downward. It can provide a dramatic effect on drapery, wall covering and pictures.
- **Covered Lighting:** Covered lighting consists of placing a series of continuous fluorescent tubes in a group or placed at one or more walls of a room.
- **Soffit Lighting:** This is a method of direct lighting in which the illumination from the light source is built into the underside of soffits or beams used in staircases, reception, lounges etc.
- **Luminous Lighting:** This is recessed lighting to light up a particular area e.g. Kitchens, utility areas, bathrooms etc.

2.4.5 Non Architectural Lighting

This consists of the light reflected from walls and ceilings. Portable lamps may also be used for general overall light or localised light.

2.4.6 Other Lighting

Other Lighting: Table lightings, point source, accent diffused and ambient lighting.

Lighting Systems: Types of lightings may be classified by the manner in which the light rays are directed on the object to be illuminated.

Direct Lighting: It is a type of light that is produced by most table and floor lamps. The light is directed downwards and the ceiling receives reflected light. This light produces sharp shadows and some times a glare. Direct lighting is usually combined with other types of lighting according to the requirements e.g. Spot lightings.

Indirect Lighting: In this type of lighting, the light is directed to the ceiling or walls from which it is reflected into the rooms. The immediate light source is secluded from view. Overall, room illumination with indirect lighting will diffuse or shadow less with low, less, light source brightness. When used above, indirect lighting is flat and uninteresting without shadows. It is suitable for general lighting of the covered valence and cornice fitting. Other lighting systems are semi direct and semi indirect lighting.

2.4.7 Light Fittings

- **Dimmers:** These are combined with on and off switches and control the level of lights on & off at one certain time or at different times in different rooms. Several dimmers can be attached to a single control.

- **Anti Burglar:** These lights function on a time switch which turn the lights on and off at a certain time or at different times in different rooms.

- **Door Switch**: This light is set in the doorframe and gets turned on when the door is opened.

- **Photo Cell Control:** Light sensitive units can replace switches at the entrance where a photocell card needs to be installed to activate the lights.

- **Full Fittings or Pendant Lights:** These are fitted over dining tables, billiards table and for spot lighting. The control switch may be a finger tap switch provided at the table.

2.4.8 Lighting For Different Areas in Hotels

Entrance Halls: Entrance halls should look interesting and the lighting should be in keeping with the atmosphere of the place. During the day, an entrance can appear dull and dim if one comes from outside. The light in the hall should be bright enough at the reception desk, on display boards etc. Care should be taken to avoid glare but the light should be sufficient for the guest to be able to read clearly.

Lounge Area: In the lounge area, a chandelier or a general light fitting may be fixed to provide overall light. Cornice lighting may be fixed to reflect on the ceiling, coved lighting may be provided by using wall brackets and other fittings. When there is a false ceiling, the light may come in through the gaps in the ceiling or through glass panels fitted in the ceiling. Lamp fittings here are concealed and only the light is reflected. The atmosphere of the lounge should be comfortable and restful. Localised lights may be used if necessary and portable fittings may be provided. In case of an area attached to a cafeteria, higher degree of illumination may be necessary for quick service.

Restaurants: In restaurants, subdued lighting is generally perfected specially at heights. General lighting is normally used for banquets. Fluorescent lightings may also be used. The effect of lighting on the colour of food should be considered.

Corridors: Subdued lighting may be required in corridors but gloom should be avoided and the guest should be able to see the room number clearly. Placement of light should not be very far from each other. Cornice or ceiling lights are quite appropriate.

Stairs: Stairs should be well lit to prevent accidents. The lights can be set along the wall or just below the handrail. In case of overhead light, fittings should be placed at the end of each flight of stairs.

Bedroom: Bedrooms do not generally require general lighting but adequate lighting should be provided in different parts of the room. The light should not be too bright. A general wall light, a table lamp, bedside lights are the standard light. Lights should be controlled at the door as well as the headboard of the bed to prevent accidents or to have the guest enter into a darkened room. Bedside lights may be mounted on to the wall or fixed as table lamps. They should be placed sufficiently high to enable the guest to read a book. Dressing table light should provide sufficient light to illuminate the face and not the mirror. Pelmet lights can be fixed which illuminates the curtain and giving a soft glow around the window area. The wardrobe built in cupboards should have one light inside to enable guests to see the contents clearly. This light may be fixed to the ceiling of the wardrobe.

Bathroom: In a bathroom, safety is of prime importance. The fittings must be safe with vapour and water proof fittings. All electrical fittings and equipment should have dual switches which can be controlled from outside. Plastic or glass is preferred to metal. An emergency light that operates independently of the main supply should be provided which comes on during power failure. This light should be placed in staircases corridors and exit entrances.

2.4.9 Impact of Lighting on Mood and Atmosphere

The selection of lighting systems, light intensity, its colour and the accessories used influence the mood and atmosphere of the room. Lighting in the bedroom should be warm and relaxing. Yet, it should be bright enough to observe the articles in the room. Light of low wattage and medium wattage is suitable. Using dimmer switches can change the atmosphere and mood. A series of down lighters and wall washers will be suitable to light up the room and prevent glare to the occupants. Subsidiary lighting by the telephone, mirror, coats rack may be necessary. In a restaurant, a relaxing mood can be created by using pelmet lights and pendent lamps above the table. The light should be dim around the people, but with medium wattage over the food. Passageways should be visible. Candlelight may also be used to create a romantic ambience. Bright pools of light alternating with shadows provide a warm

welcome. Lights in office area must provide general light as well as spot lighting on the table. Reading lights should be situated behind the user at the top left hand side.

CHECK YOUR PROGRESS-II

Q1. Write a note on Lighting.

Q2. Write a short account on impact of light on mood.

2.5 FURNITURE

Furniture can be a product of design and is considered a form of decorative art. In addition to furniture's functional role, it can serve a symbolic or religious purpose Wall coverings maybe purely decorative, in which case, ability to bring colour, pattern, texture, light or shade to the room maybe of the greatest importance. On the other hand the covering maybe required to give an easily cleaned and hygienic surface. Floor is important aspect of interior decoration. Floors are both functional and decorative and play an important part in the cleaning and maintenance program of any hotel. They cover a large area and are subjected to a great deal of wear and tear.

The word textile is derived from the Latin term "texture" for woven fabrics. Thus by textiles we understand those objects which have been prepared by weaving. Textile has an important bearing on our daily lives and everyone needs to know about textiles as we use them in some way or the other. Yarns are produced by twisting or spinning of the textile fibres and in turn fabric is a structure produced by interlacing or interloping of the yarns. There are certain terms which are used very often in the study of textiles that are to be understood first.

A "fibre " are product capable of being woven or otherwise made into fabric. These fibres are of many types. Soft furnishing are piece of items that are both necessary for

comfort and convenience as well as decorative, providing colour, pattern and texture to the room. Soft furnishings include fibres that are used for curtains, loose covers, cushions, bedspreads and quilts. Some articles in addition provide warmth and comfort. Each article is subjected to variable amount of wear and tear.

Furniture refers to movable objects intended to support various human activities such as seating and sleeping. Furniture is also used to hold objects at a convenient height for work as horizontal surfaces above the ground, such as tables and desks, or to stores things. Furniture can be a product of design and is considered a form of decorative art. In addition to furniture's functional role, it can serve a symbolic or religious purpose. It can be made from many materials, including metal, plastic, and wood. Furniture can be made using a variety of woodworking joints which often reflect the local culture.

2.5.1 Selection of Furniture

Following points should be considered while selecting furniture:

- Comfort
- Aesthetic Appeal
- Design
- Cost
- Durability
- Multiple uses
- Safety
- Saving space
- Portability

Comfort: office furniture should be comfortable. Comfortable furniture will result in increased efficiency of the employees

Aesthetic Appeal – Purchase furniture that complements the existing décor with the color scheme. It should enhance the overall appearance of your interiors. A good design elevates the mood of both employees and guest and keeps their stress levels low.

Design: design of furniture relates with height and width, color, number of drawers, and so on. No matter what, furniture should support the space and must facilitate the works done.

Cost: cost of furniture is a very important factor to be considered before selecting any machine. The furniture should be within the budget of an office

Durability: office furniture should be made up of steel rather than wood because steel furniture is compatible and lost lasting. Office furniture can be expensive and it is not possible to purchase new furniture every year because it doesn't even support the space. Therefore, the furniture to be purchased must be free from problem of breakage.

Multiple uses: furniture should be usable for numerous purposes in the office.

Safety: office furniture should be safe. Glass topped and sharp cornered furniture are relatively unsafe.
Saving space: choice of furniture also depends upon the space occupied by furniture. Such furniture should be selected which would occupy minimum office space. Bulky and space occupying furniture indirectly add office cost.

Portability: the furniture being portable can be easily shifted from one room to another, one building to another and form one location to another.

2.5.3 Types of furniture

There are primarily four types of furniture fond I hotel guest room based on way they are placed.

Free-standing furniture: The furniture that can be rearranged whenever necessary but the disadvantage is that they accumulate dust behind, above and beneath them. E.g. chairs, tables, beds etc.

Cantilevered furniture: These types of furniture's fitted to the wall on brackets so there is no legs.

Built-in furniture: The piece of furniture is fitted ad fixed into architectural space. Usually their cost is incorporated into the building cost. Since built in furniture has no gap behind, above or below so cleaning is minimized. However, the disadvantage is that once built in the particular piece of furniture cannot be moved, thus reducing its flexibility.

Fitted furniture: Though the terms built-in and fitted are often used interchangeable. Fitted furniture is made to fit into existing alcoves, thereby saving space. The room appears more spacious and streamline when fitted furniture.

Based on other characteristics, furniture may also be categorized as follows:

Antique furniture: It includes pieces from an earlier period. It is often crafted out of wood and its age, condition, unique features and rarity determine how collectible the piece is and therefore, how high its value. Genuine antiques are, by definition, at least 100 years old considered an antique.

Upholstery: Upholstery with fabrics and its techniques had been mastered by the end of the 17^{th} century, by borrowing splendid material and lavish trimmings. Initially these were detachable loose covers, which were later converted to fixed upholstery. These wrappings were supposed to be removed when the furniture was used. Tapestries, furniture and carpets beside silk damasks and velvets were mostly produced in France and Italy.

Modular furniture: These types of furniture are based on standardise measurement or module, so that different pieces can be joint together with verity of ways. One of the major benefits of modular furniture is, it can be resembled and dismantled whenever required in short period of time.

2.5.3 Uses of Wood in Furniture Making

There are two types of wood in use hard wood & soft wood.

Hard wood: It is strong and is used for Hardwood, being harder and heavier, tends to be sturdier and longer-lasting. Additionally, hardwoods are more resistant to decay than softwoods. The biggest drawback for quality hardwood is its high cost. They include teak, mahogany, oak walnut and beech.

Soft wood: Softwood is also generally more pliable, making it an easier material to work with and hence cheaper to manufacture. However, due to its lack of density, it can scratch and damage more easily. Consequently, softwood furniture needs more care than hardwood. Such as pine, dell and fir are used for construction of furniture, subfloor, joints, ceilings, broom handles, etc., where the wood is either covered up or out of public view.

Wood products These are less expensive as compared to solid wood items. The most commonly used ones include: -

Plywood – It is made by bonding together a number of thin sheets (piles) of wood (usually hardwood) in such a way that the grain of one sheet lies at right angles to those on either side of it. It can be bent to any shape during manufacture and may have as many as nine piles. It's very strong and maybe covered with plastic laminate or a hardwood veneer.

Chipboard – It is used extensively for worktops, wardrobes, chests of drawers, etc. and nearly always has a wood veneer or plastic laminate. It is heavy and strong but flexible. It is made by mixing wood chips with a synthetic resin adhesive.

Hardboard – It is more flexible than chipboard and much thinner. Made from compressed brown fireboard, it is smooth on one side with a mesh texture on other. Hardboard is used as a backing for wardrobes, base of drawers, door panels, backing for pictures, base for floor tiles, etc.

Block boards – This consists of strips of wood between veneers. The inner strips of wood are fairly thick (up to 30 mm) making it a strong material usually used for making shelves and table tops.

Wood products are nearly always faced with a plastic laminate, sun mica, Formica or wood veneer. Hence they should be cleaned according to their outer

surface. However all of them will deteriorate if excessive amount of water is allowed to penetrate.

2.5.4 Protecting Wood Surfaces

Unprotected wood surfaces will absorb moisture, which causes the grains to swell and so creates gap into which dirt and germs can fall and become trapped when it dries. Liquids such as coffee and wine leave a stain on the surface, which is difficult to remove, and scratching is difficult to avoid, particularly on floors. The following are the most commonly found methods of protection and maybe referred to as *wood finishes*.

Cellulose lacquer – This is fairly durable matt applied to solid timber furniture during manufacture. It should be dusted and wiped with a damp cloth and then dried with a soft one. Cream or spray polish may be applied to give a gloss finish. Heat, water and solvents will cause damage.

French polish – This is also easily damaged by heat, water and solvents. Deterioration is caused by light and atmosphere in general. French polishing is produced by rubbing the solid wooden surface with a solution of Shellac (a dark red resin) and methylated spirits. It should be dusted daily and polished in the way of the grain. Occasionally cream, liquid or paste polish maybe applied to remove light soiling and improve the gloss.

Oil – Solid wooden furniture can be given a matt protective finish by rubbing the surface with a mixture of oil (usually linseed oil) and resin. This process gives very little protection although it will help to reduce the absorption of water. Daily dusting is essential. Marks can be removed by lightly rubbing with very fine steel wool. About twice a year the surface should be rubbed with a mixture of equal quantities of turpentine and raw linseed oil. Proprietary polishes should be avoided.

Paint – This is very widely used on furniture, window frames, doorframes, skirting, staircase railings, etc. Gloss paint is tougher than matt or silk and will withstand more frequent washings. All painted wood surfaces should be dusted daily and wiped with a synthetic detergent solution or solvent weekly. Spray or cream polishes can be used to retain the shine or gloss on surfaces. Heat, alkalis and abrasives easily damage paint.

Resin (varnish*)* – Natural and synthetic resins such as polyesters, melamine and polyurethane are used extensively on wooden furniture, window frames, skirting, floors and staircases. The finish maybe glossy or matt and is frequently applied to furniture made from chipboard. Resin is extremely tough and will resist heat, water, solvents and abrasives; but once damaged by scratching or chipping, it is very difficult to repair. Dusting should be done regularly. Cream or spray polish should be applied on glossy surface after damp wiping. Matt surface should be rubbed up occasionally using a mixture of 500ml turpentine, 100ml boiled linseed oil and 500ml vinegar.

Wax (bees wax) – This is applied on solid wood surfaces. It provides an attractive finish, exposing the pattern of the wood, but is easily damaged by heat, water and solvents. Waxed surfaces should be dusted daily and cleaned weekly with cream and liquid polish.

REMOVING STAIN FROM WOODEN SURFACES

Alcohol stain – Polish well. If the stain persists rub along the grain with a metal polish or a mixture of linseed oil and cigarette ash.

Burns (black marks) – Rub with metal polish. For wax or oil finishes, rub the mark hard with turpentine.

Heat marks (white rings) – Rub with turpentine in the direction of the grain.

Ink – Dab with vinegar, leave for 2-3 hrs, then wipe. If unsuccessful, use a matchstick or cotton wool and carefully dab with hypochlorite bleach, immediately wiping with a clean cloth or absorbent paper.

Scratches – Mask with similar coloured wax crayon, shoe polish or liquid polish dye.

Watermarks – Rub with turpentine in the direction of the grain. If the stain persists, rub with metal polish, followed with suitable furniture polish.

2.5.5 Cane, Wicker and Bamboo

These are names given to items made from thick grasses (bamboo), palms (cane), willow sheets (wicker). They have similar characteristics to timber products but are usually woven or plaited into chairs, tables, headboards, etc. They are easily damaged and regular cleaning is necessary. Cleaning includes brushing or vacuuming everyday and wiping approximately once a week with a solution of warm water and washing soda or solution of 5ml borax in 50-ml water. Both methods should be followed by rinsing with cold water in strands. Oil or wax polish maybe applied to polished surfaces. Items used for food items should not be polished e.g. breadbaskets.

CHECK YOUR PROGRESS-III

Q1. Write a note on Cane, Wicker and Bamboo.

_____
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Q2. Write a short account on types of wood.

2.6 SUMMARY

People have made use of colour since prehistoric times, for example in decorating their bodies, in colouring the furs and skins that they wore and in the paintings which adorned their cave dwellings. Of course, in those days the colours that were used were derived from natural resources. The dyes used to colour clothing were commonly extracted either from vegetable sources, including plants, trees, roots, seeds, nuts, fruit skins, berries and lichens, or from animal sources such as crushed insects and molluscs. The pigments for the paints were obtained from coloured minerals, such as ochre and haematite, which were dug from the earth, ground to a fine powder and mixed into a crude binder.

In many modern decors the source of lighting is concealed. Contemporary decors also use table, wall, and hanging lamps, which are securely fastened to the facility to reduce theft and avoid accidents. Table lamps should have their on/off switches located at their bases. This reduces the possibility of scorched fingers and the prospect of groping about in the dark for the switch. Floor lamps are seldom, if ever, used in modern hotel construction because of the space used and the tripping hazard created by unsightly cords.

Most hoteliers would agree that one of the most important elements of a guest's comfort is the quality of the bed. There is little that the hotel can do to make up for a guest's discomfort caused by a sleepless night on an uncomfortable bed. Unfortunately, there is no unanimity of thought as to what makes a comfortable bed. Although some guests might disagree, the prevailing thought holds that a comfortable bed is one that is firm on the inside but has a soft exterior.

2.7 GLOSSARY

Alcohol stain – Polish well. If the stain persists rub along the grain with a metal polish or a mixture of linseed oil and cigarette ash.

Anti Burglar: These lights function on a time switch which turn the lights on and off at a certain time or at different times in different rooms.

Antique furniture: It includes pieces from an earlier period. It is often crafted out of wood and its age, condition, unique features and rarity determine how collectible the piece is and therefore, how high its value. Genuine antiques are, by definition, at least 100 years old considered an antique.

Block boards – This consists of strips of wood between veneers. The inner strips of wood are fairly thick (up to 30 mm) making it a strong material usually used for making shelves and table tops.

Built-in furniture: The piece of furniture is fitted ad fixed into architectural space. Usually their cost is incorporated into the building cost. Since built in furniture has no gap behind, above or below so cleaning is minimized.

Burns (black marks) – Rub with metal polish. For wax or oil finishes, rub the mark hard with turpentine.

Cantilevered furniture: These types of furniture's fitted to the wall on brackets so there is no legs.

Cellulose lacquer – This is fairly durable matt applied to solid timber furniture during manufacture. It should be dusted and wiped with a damp cloth and then dried with a soft one. Cream or spray polish may be applied to give a gloss finish. Heat, water and solvents will cause damage.

Chipboard – It is used extensively for worktops, wardrobes, chests of drawers, etc. and nearly always has a wood veneer or plastic laminate.

Cool colors-on the other hand, sit on the *blue/green* side of the color wheel; they are generally perceived as soothing and calm.

Cornice Lighting: A cornice is insulated in ceiling and directs the light downward. It can provide a dramatic effect on drapery, wall covering and pictures.

Covered Lighting: Covered lighting consists of placing a series of continuous fluorescent tubes in a group or placed at one or more walls of a room.

Dimmers: These are combined with on and off switches and control the level of lights on & off at one certain time or at different times in different rooms. Several dimmers can be attached to a single control.

Door Switch: This light is set in the doorframe and gets turned on when the door is opened.

Fitted furniture: Though the terms built-in and fitted are often used interchangeable. Fitted furniture is made to fit into existing alcoves, thereby saving space.

Free-standing furniture: The furniture that can be rearranged whenever necessary but the disadvantage is that they accumulate dust behind, above and beneath them. E.g. chairs, tables, beds etc.

French polish – This is also easily damaged by heat, water and solvents. Deterioration is caused by light and atmosphere in general. French polishing is produced by rubbing the solid wooden surface with a solution of Shellac (a dark red resin) and methylated spirits.

Full Fittings or Pendant Lights: These are fitted over dining tables, billiards table and for spot lighting. The control switch may be a finger tap switch provided at the table.

Hard wood: It is strong and is used for Hardwood, being harder and heavier, tends to be sturdier and longer-lasting.

Hardboard – It is more flexible than chipboard and much thinner. Made from compressed brown fireboard, it is smooth on one side with a mesh texture on other.

Heat marks (white rings) – Rub with turpentine in the direction of the grain.

Hue: Hue represents the color itself—red, yellow, blue, etc. If you were to take the visible spectrum—red, orange, yellow, blue, indigo and violet—and place each color in a circle.

Ink – Dab with vinegar, leave for 2-3 hrs, then wipe. If unsuccessful, use a matchstick or cotton wool and carefully dab with hypochlorite bleach, immediately wiping with a clean cloth or absorbent paper.

Intensity/Chrome: It refers to the purity of a hue and the brightness or dullness of a color Intensity is also known as **Chroma** or **Saturation**. The highest intensity or purity of a hue is the hue as it appears in the spectrum or on the color wheel. A hue reduced in intensity is called a **Tone**. A tone is a hue with reduced or dulled strength.

Luminous Lighting: This is recessed lighting to light up a particular area e.g. Kitchens, utility areas, bathrooms etc.

Modular furniture: These types of furniture are based on standardise measurement or module, so that different pieces can be joint together with verity of ways.

Oil – Solid wooden furniture can be given a matt protective finish by rubbing the surface with a mixture of oil (usually linseed oil) and resin. This process gives very little protection although it will help to reduce the absorption of water.

Paint – This is very widely used on furniture, window frames, doorframes, skirting, staircase railings, etc. Gloss paint is tougher than matt or silk and will withstand more frequent washings.

Photo Cell Control: Light sensitive units can replace switches at the entrance where a photocell card needs to be installed to activate the lights.

Plywood – It is made by bonding together a number of thin sheets (piles) of wood (usually hardwood) in such a way that the grain of one sheet lies at right angles to those on either side of it.

Resin (varnish*)* – Natural and synthetic resins such as polyesters, melamine and polyurethane are used extensively on wooden furniture, window frames, skirting, floors and staircases.

Scratches – Mask with similar coloured wax crayon, shoe polish or liquid polish dye.

Shade is the term used to describe a hue that has been darkened in value from its normal value.

Soft wood: Softwood is also generally more pliable, making it an easier material to work with and hence cheaper to manufacture.

Soft-fit Lighting: This is a method of direct lighting in which the illumination from the light source is built into the underside of soffits or beams used in staircases, reception, lounges etc.

Tint is the term used to describe a hue that has been lighted in value from its normal value. Pink is tint of red.

Upholstery: Upholstery with fabrics and its techniques had been mastered by the end of the 17^{th} century, by borrowing splendid material and lavish trimmings. Initially these were detachable loose covers, which were later converted to fixed upholstery.

Valence Lighting: A historical fluorescent tube is placed behind a valence board, carting up light which reflects and then down, shining on the drapery by providing both direct and indirect light.

Valence Lighting: A historical fluorescent tube is placed behind a valence board, carting up light which reflects and then down, shining on the drapery by providing both direct and indirect light.

Value: It is the one dimension of color space that can stand alone. Value represents the lightness or darkness of a given hue the value ranges from 0 for pure black to 10 for pure white.

Warm colors0 in the most general terms, are related to the *yellow/red* side of the **color wheel** chart. They attract attention and are generally perceived as energetic or exciting.

Watermarks – Rub with turpentine in the direction of the grain. If the stain persists, rub with metal polish, followed with suitable furniture polish.

Wax (bees wax) – This is applied on solid wood surfaces. It provides an attractive finish, exposing the pattern of the wood, but is easily damaged by heat, water and solvents. Waxed surfaces should be dusted daily and cleaned weekly with cream and liquid polish.

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2.10 TERMINAL QUESTIONS

1. Define the following terms;
   Hue, Tint, Value, Shade
2. What are the dimensions of colors?
3. Discuss the Prang's colour system with the help of colour wheel.
4. Classify the different types of colour schemes and discuss each category in detail.
5. Define lighting? What are different types of lighting?
6. List the points to be considered while selecting furniture for hotel.
7. What are the different methods of lighting? Explain each type.
8. What are the factors affecting lighting for different areas of hotel?
9. Define furniture? List the criteria Selection of furniture for hotel.
10. Write a note on Cane, wicker and bamboo

UNIT: 03
FLOOR COVERING AND WALL COVERING

Structure

3.1 INTRODUCTION

Wall coverings maybe purely decorative, in which case, ability to bring colour, pattern, texture, light or shade to the room maybe of the greatest importance. On the other hand the covering maybe required to give an easily cleaned and hygienic surface. Floor is important aspect of interior decoration. Floors are both functional and decorative and play an important part in the cleaning and maintenance program of any hotel. They cover a large area and are subjected to a great deal of wear and tear.

The word textile is derived from the Latin term "texture" for woven fabrics. Thus by textiles we understand those objects which have been prepared by weaving. Textile has an important bearing on our daily lives and everyone needs to know about textiles as we use them in some way or the other. Yarns are produced by twisting or spinning of the textile fibres and in turn fabric is a structure produced by interlacing or interloping of the yarns. There are certain terms which are used very often in the study of textiles that are to be understood first.

3.2 OBJECTIVES

After reading this unit the learner will able to:

- To get knowledge of all types of wall covering uses, advantages and disadvantages.
- Know about various types of wall coverings.
- know about various window treatments
- Understand the different type of floor finishes especially carpets.
- Some knowledge of soft furnishing

3.3 FLOOR AND FLOOR COVERINGS

Floors are important aspect of interior decoration. Floors are both functional and decorative and play an important part in the cleaning and maintenance program of any hotel. They cover a large area and are subjected to a great deal of wear and tear. Clean and well-kept floors indicate the standard of cleanliness throughout the establishment. Ease of cleaning in relation to the type and amount of soiling Sound and heat insulation Nature and condition of sub floor. Floor surfaces cover a large area of the room and are subjected to constant wear. They are expensive and replace less frequently than other furnishings. Improperly laid floors or damaged floors can cause accidents and damage to the equipment. Floor surfaces must be comfortable and quiet besides contributing to the décor of the room. The traffic in the area and utility of the room must also be considered.

Sub-Floors: Floor surfaces are divided into two types hard and soft floors. A sub floor is laid below the floor surface which may be made of soft wood or hard board. It should be free from dampness, dirt and unevenness. This protects the top floor. In large modern buildings the subfloor is often made of concrete but in older and smaller buildings it consists of soft wooden boards, nailed to wooden joints.

3.3.1 Selection of Floor Finishes

The various factors affecting selection of floor finishes are as under:

- Appearance
- Comfort
- Durability
- Life Expectancy
- Safety
- Ease of Cleaning
- Cost

Appearance: Colour, pattern and texture of the floor surfaces should be compatible to the size, décor and activity of the room. Pale colours provide a cool appearance of warmth. Patterned surfaces add interest to the room.

Comfort: Foot fatigue should be reduced by use of soft resilient surfaces. Floor surfaces should not be noisy or slippery.

Durability: Grit, dragging of furniture and placement of equipment or circulation of heavy traffic should not damage the floor surface. They should also not be affected by the cleaning reagents and food spillages.

Life Expectancy: Since floor surfaces are not changed frequently, they are expected to last for longer time.

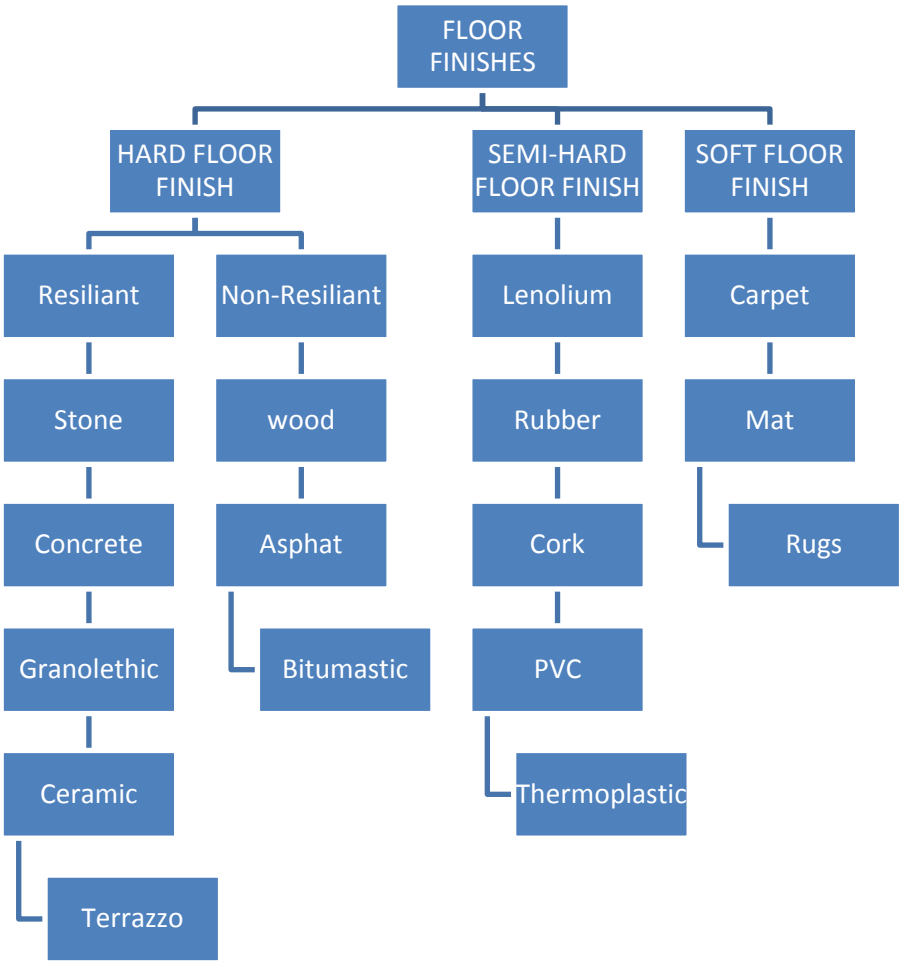
Safety: Safety to the guests and occupants must be considered. Fire resistance, slip resistance and accident proof surfaces must be selected.

Ease of Cleaning: Ease of maintenance and cleaning costs must be considered while selecting them.

Cost: The cost of floor surface cost of lying and maintenance should be considered before selection.

3.3.2 Types of Floor Finishes

Hard floor finishes: Hard floors are usually sealed to give a non-absorbent, semi permanent gloss or finish which will wear off in time. Seal is applied on clean and dry floor. Before re-sealing any remaining seal has to be stripped off. This is done with a chemical stripper, except in the case of wood and cork where sanding is done. In order to preserve the seal, polish should be applied to seal flooring. Polishes are usually spirit or water based. Spirit based floor polishes may be paste or liquid and require buffing when dry to produce a shine. Water based polishes are liquid and dries after application to give a shiny surface.



Types of floor finishes

3.3.2.1 Non Resilient Hard Floor Finishes

Stone: The natural stone are available in slab form, is usually cut in tiles from quarried blocks of the stone or rocks. Floors made from marble & granite is expensive and hard on feet. Provides beautiful flooring material that has a timeless, elegant quality. They referred as hard floors because they offer no resilience, are cold underfoot and noisy in comparison to other types of floors. The various types of stone commonly used are: marble, slate, quartzite, sand stone, granite etc.

Concrete: It is composed of cement and sand. Pigments may be added to provide colour. This floor can withstand large weights but is damaged by acids and alkalis. It is suitable for stores, sub-floors, laundry, staircase etc. Concrete is extremely porous, hard and soiled easily. A scale may be applied to make it stain resistant. These floors are suitable in halls, lounges, corridors, and bathrooms and as tabletops.

Granolithic: it is hard floor finish of graded granite chips set in cement. It is used for basement corridors, storerooms, stairways and laundry. The final surface is hard-wearing and its appearance is improved if the surface is polished. It is usually laid in tile form.

Terrazzo: This is also a hard floor finish, consisting of a mixture of marble and other decorative chipping set in fine cement that can be colored. Marble is a rock (limestone) mainly found in Italy, and maybe white, black, green or brown. When used as flooring it is laid in slabs. Marble is very expensive; terrazzo being only chips

of marble is much cheaper. To prevent slipperiness self-polishing emulsions are applied. Terrazzo is used in foyers, cloakrooms and kitchens.

Ceramics: Ceramic tiles are made of clay and fired at high temperature. They are hand or machine made, glazed and unglazed. Shapes of the tiles may be square, rectangular or hexagonal. Tiles are waterproof and impervious to cleaning liquid. They are commonly used in bathrooms, kitchens, laundry, canteens, bars etc. These floors are hard, noisy and tire the feet. Ceramic floors should not be polished since that would make it dangerously slippery.

Glazed ceramic tile Glazed ceramic tiles are made from special ceramic clay in two operations Biscuits the body of tile is made and fired at 1200 To 1300 c Glazed Biscuits are then coated with glazed, decorations etc.

Vitrified tile When Special Clay is mixed with quartz and feldspar and burned to very high temperatures. These extra ingredients melt, creating a glass element inside the tile. This glass component makes the vitrified files very hard and resistant to any type of absorption. This word 'Vitrified Tiles' is simply a type tile with very low water absorption. And this property makes vitrified tiles acid/alkali/chemical resistant, impairs a greater strength & makes it stain resistant.

Vitrified tile Full body vitrified tiles: This type of vitrified tiles has color all the way throughout the body (thickness) of the tile. Because of this scratches are less noticeable in this type of tiles. Full body vitrified tiles are formed with the paint mixture pre-added while making the body. It is called Glazed Vitrified Tiles (GVT). Main advantage with GVT is it offers option of making any type of design/art work that is only possible in this type of vitrified tiles. Much type of textures (like wooden, bamboo slate or stone) are possible in GVT.

3.3.2.2 Resilient Hard Floor Finishes

Wood: Wood Floors There is nothing quite as attractive as the warmth and richness of wood floors. Most hardwood floors are made from oak, but other popular woods include ash, beech, birch, hickory, maple, teak, and walnut. In addition to its attractiveness, hardwood floors are extremely durable if they are properly finished and maintained. Unfinished wood floors will quickly deteriorate under even light use, as wood is an extremely porous material. Unfinished woods are susceptible to dirt lodging in the grains, splintering of the wood fibers abrasions caused by normal foot traffic, and of course, moisture, the bane of wood floors. Too much moisture will cause a wood floor to warp, while too little humidity will cause wood floors to shrink and crack. To help forestall damage, most wood floors made today receive factory applied finish. Tung oil and carnauba wax are then applied to seal the wood. Wood Floors since there is a degree of resiliency in even the hardest of hardwood floors, precautions should be taken to protect the floor from furniture legs that may dent the flooring. The types of wood flooring are outlined below:

Wood Parquet flooring: It is a floor composed of short strips or blocks of wood forming a pattern, sometimes with inlays of other woods or other materials. Parquet flooring is a series of wood flooring pieces that create a geometric design. Parquet offers a variety of design options. Timber used for Parquet floor is Jati & Kempis.

Plywood: These are made into tiles that can be used to stimulate wood parquet but are generally called 'parquet' these days even when laid simply to resemble a board floor. Various ready-patterned tiles in herringbone, basket weave or strip are available. Plywood parquet tiles are not durable in areas of heavy wear. It is supplied in various squares from 9inches to 3ft.

Hard wood strips: These are high-quality wood flooring made of hardwoods. A well maintained hardwood floor improves with age. Hardwood blocks vary in thickness from ¾ inch to 1 ¼ inch and the size may be up to 12 x 3 inches. The strips used are up to 4inches wide and are carved to have a tongue and groove.

Asphalt tiles: they are composed of asbestos fibres, pigments, inert fillers, bound with asphalt in the case of a darker verities and with some other resinous binder in the case of lighter colors.

Bitumastic flooring: This is a joint less, low cost flooring and consist of a type of asphalt roll onto a sold sub floor in a hot plastic state. It is soft in texture, though the appearance is that of a hard floor. It is normally black, brown and red in colour. It is also used in as moisture-proof membrane to protect other flooring against dampness. Howe ever, it is damage by heat and heavy weigh

3.3.2.3 Semi Hard Floor Finishes

Linoleum: This is made up of lignum, i.e. flax and ileum in oil. Ground corkwood, linseed oil and resins (gum) are pressed on to jute backing. This is prepared in sheet or tile form. Linoleum may crack if laid on poor quality sub floor. It is hard wearing, resilient and warm, but may peel, rot and gets destroyed by alkalis. The thickness varies from 2mm to 6mm. Linoleum flooring is also available in form of tiles. Linoleum flooring should be laid over an effective damp-proof area. Its properties included in a remarkable degree of resiliency. Next to cork and rubber, and of course, padded carpeting, linoleum is considered to have the greatest degree of resiliency. Linoleum was quite durable, was resistant to oil and grease, and do not shrink. The negative aspects of linoleum were that it is highly susceptible to water. The linoleum would absorb water and would then soften, causing it to lose its abrasion resistance and become more susceptible to indentation.

Rubber: Rubber floors are usually made by a combination of natural and synthetic rubber. They may be laid in sheets or tile form. They may be coloured and mottled with inlaid patterns. The floor is hard wearing, resilient, quiet and waterproof. It is non-slip and may be grease resistant. Damage may occur due to alkalis, acids and spirits. One major advantage is that they are quite resilient and will remain resilient over a considerable temperature range. They are not affected by mould, bacteria and pest infestation. It is commonly used in kitchens, bathrooms, health clubs, near swimming pools etc. Rubber Floors All modern rubber floors are made from synthetic rubber

such as styrene butadiene rubber (SBR). Rubber tiles are cured or vulcanized by the application of heat. Rubber floors are nonporous, waterproof surfaces. Rubber flooring is susceptible to alkaline, oils, grease, solvents, ultraviolet light, and ozone in the air.

Vinyl Floors: There are several types of vinyl floorings and tiles. The major varieties include vinyl composition tiles, homogeneous or flexible vinyl tiles, and laminated vinyl flooring. Laminated vinyl flooring is less expensive to manufacture than vinyl composition or homogeneous vinyl floors. The low initial cost may be deceiving, however, for once the top wear layer is worn through, the floor will have to be replaced. Some laminated floorings are only guaranteed for three years with moderate use. The cost of laminated vinyl flooring will vary in proportion to the thickness of the top vinyl wear layer. Vinyl Floors In addition to the vinyl resins, vinyl composition tiles contain mineral fillers such as asphalt and pigments. Homogeneous vinyl tiles may either be flexible or solid, and it has become the preferred standard for resilient tile flooring. It is practically unaffected by moisture, oils, and chemical solvents. Vinyl is made from asbestos, fibres, mineral pigments and PVC. They are very hygienic and deal in hospitals, kitchens, dining area, nurseries, common rooms, lifts etc. They are water and oil resistant and can be made slip resistant. They are damaged by cleaning gels, high temperature and acids.

Thermoplastic: These are made of asphalt, fibres, mineral fillers and pigments or synthetic resins with vinyl binder. The tiles are usually dark coloured and quite durable. They have good thermal insulation and are resistant to water. They are damaged by heat, acids and alkalis. They are useful in canteens, corridors, shops and offices. PVC may be added to make hard thermoplastic more flexible.

Cork: Cork tile is made from the outer bark of oak trees. The cork is ground into large granules, mixed with synthetic resins, and pressed into sheets, which are then cut into tiles. Contemporary cork tiles for floors usually have a top layer of clear vinyl applied to them. This vinyl layer protects the cork from staining and wear. Cork tiles traditionally have had limited application in industrial or institutional settings. One reason is that cork is susceptible to staining because it is one of the most porous of all floor coverings. Another limitation is that it is not durable; it is highly susceptible to abrasion. Cinders, sand, and gravel tracked on to a cork floor will severely shorten its life span. Finally, it is expensive.

Floor Type	Method
Asphalt composition, bitumastic, thermoplastic	Sweep and damp-mop daily. Occasionally apply self shine polish. Never use wax polishes, as the spirit in them will damage the surface. Remove marks by rubbing lightly with ire wool; then wipe over with a sponge wrung out in warm water and proceed to polish
Cement/concrete/clay or quarry tiles, stone and brick	Sweep and dry-mop daily. Periodically wash or scrub with detergent suds. May be sealed to make the floor non-slip and resistant to dust, oil water and grease. Polish quarry tiles with liquid tile polish or self-shine tile polish
Glazed tiles, Terrazzo	Sweep or dry-mop daily; or wipe down with mild detergent solution. Avoid all abrasive cleaner.

Cork	Sweep or damp-mop daily. Wax polish periodically. If sealed, use self-shine polish occasionally.
Linoleum	Sweep or dry-mop daily or wipe with cloth wrung out in warm water and detergent. Polish with wax or self-shin polish o use a combination cleaner-cum-polisher.
Marble	Sweep or dry-mop daily. Wash with soft cloth wrung out in warm water and detergent. Rinse well and dry. Remove light stains with mild abrasive, lemon juice or vinegar; rinse off and dry.
Rubber	Sweep and dry-mop daily. Apply self-shine polish weekly until pores are filled and non-absorbent. Wash only hen very dirty and do not over wet. Avoid oil or spirit based sealants and wax polishes.
Vinyl, vinyl asbestos, matt PVC, felt-backed vinyl	Sweep or dry-mop daily. Wash when needed with cloth wrung out in warm soapy water. Polish with self-shine finisher or combination cleaner-cum-polisher. Avoid oil-based sealant, spirit-based cleaners and solvents. To remove marks, rub gently with wire wool.
Wood, wood blocks, wood mosaic, hardwood strips, plywood parquet.	Sweep daily and occasionally mop or wash. If unsealed, apply wax polish periodically if sealed, damp-mop and buff with dry mop. Use self-shine polish periodically.

Cleaning methods of different types of flooring

3.3.2.4 Soft Floor Covering

Soft floors are used for variety in colour, texture and design. They are warm, durable, quiet, slip resistant and economical. Various types of colourings may be used in different areas depending upon cost of maintenance, cost of installation, attractiveness and use. Soft floor coverings commonly consist of two types: Carpets and Rugs.

3.4 CARPETS

Carpets are used extensively in hotels and institutional establishment. The type of carpet selected will depend upon the suitability and traffic in the area. They may be used in bedrooms, lounges, TV rooms, restaurants, office and corridors. A good quality carpet should be able to withstand spillages, cigarette ash and grit. They must also be resilient to heavy furniture.

Rugs and matting: Rugs may be used on floors where wall-to-wall carpeting is not advisable. In heavy traffic areas, rugs can be turned over to neutralize wear and tear. They can be rolled and removed for cleaning and modifications in arrangement. Rugs may be used to control noise and add colour or pattern to the floor. They are made of cotton, wool or blended with synthetic material.

Matting is used in corridors, building entrances, around swimming pools and outdoors to prevent heavy soiling and provide noise control in the area coir, cotton and filtered fibres are most common.

3.4.1 Carpet Construction

Carpets consist of three layers: a pile, a background and an underlay. The pile is held into the backing with knots and adhesives.

Under lay: The underlay acts as a shock absorber between the backing and the sub floor. It makes the carpet softer and provides insulation. Underlay may be made of felt, rubber, foam or jute with polypropylene backing.

Backing: Natural materials like jute, hemp, glue and starch are used along with resin, synthetic rubber and polypropylene to form the backing. A secondary backing may be added to improve resilience.

Pile: The carpet pile absorbs most of the wear. It is called the face of the carpet; this is the part which is seen on the surface. It should be strong and resilient, shrink- proof, moth proof and flameproof. The fibre such as wool and cotton, silk is used. The carpet pile is generally made of blends of fibres.Carpets can be produced with several different kinds of pile.

3.4.2 Types of Piling

Cut Pile: In these types of carpets, the ends are cut on the surface of the carpet. The pile may be short and smooth or long and shaggy. It may also be cut long and short.

Looped Pile: It is uncut and may be tufted. It could be shaggy or smooth.

Cut and Looped Pile: This is a combination pile used in pattern carpets

3.4.3 Types of Carpet

Woven Carpets: Some of the highest quality carpets are made of weaving method. The pile and backing woven together so they lock into the position. Here, the pile and backing is produced simultaneously. The pile is secured with a knot and is therefore very strong. The pile may be either cut or uncut. This type of weave gives a sculptured effect E.g. Axminster carpets, carpets. Woven carpets are expensive but very durable and are used in hotel reception areas, corridors, dining area, bedrooms, lounges etc.

Types of woven carpets: Wilton carpets; they may be produced as patterned, cord, Brussels, or plain. Axminster carpets; There are three types of Axminster carpets. They are Spool, gripper, chenille.

- **Oriental carpets**
- **Wilton carpets**

Pattern Wilton Carpets: These are woven on the jacquard looms which draw up one thread at a time to form the pile while the remainder stay hidden in the backing giving strength, warmth and resilience. Up to five colours may be used in the carpet construction.

Plain Wilton carpets: These are not woven on the jacquard looms only one colour is used, they have extra jute threads called 'stuffer' added to the backing to compensate for lack of the spare coloured yarn as filling.

Cord: These are plain Wilton carpet with uncut pile.

Brussels: These carpets are patterned Wilton carpets with an uncut pile.

Axminster carpets: this carpets are woven in such a way that the pile is entirely on the surface. The pile is longer and less close than Wilton carpets. They are of three types.

Spool Axminster: this is the most popular Axminster carpets and a single piece can have an unlimited numbers of colours in the pattern. The carpet is woven in such a manner that the pattern is visible o both the side.

Gripper Axminster; Same as spool Axminster carpets but the difference being the maximum eight colours only.

Chenille Axminster carpets: In French Chenille refers to a "caterpillar". The carpet is soft and thick, giving a pile a segment look like a caterpillar.

Hand Made Carpets/ Oriental carpets
These are traditional carpets, backed by centuries of excellence in manufacture. They are functional as well as aesthetic. They have a long life, durability and richness of weave and design. They are made by knotting pieces of yarn on to a backing weave.

3.4.4 Non Woven Carpet

Tufted Carpets: These are cheaper than woven carpets and forms 50% of the carpets produced. These are made by inserting tufts into a backing and securing with latex. The pile is looped, cut or combination. The carpet manufactured by this technique is very fast and comes in various dimensions. They are commonly used in hotels and institutions. Care is necessary to prevent over wetting which may damage the adhesive.

Needle Loom: These carpets have no pile but are made by needle punching and entangling a mixture of fibres through a backing fabric and coating it with resin. Nylon, jute and polypropylene are used. Heat may be applied to fix the fibres.

Bonded Pile: In this type of carpet, the pile is compacted and bonded to an adhesive backing. Shortcut pile, loops, cords or electrostatic flocking may be used. Application of heat causes firm bonding.

Electro statically flocked carpets: Bonding is also used for flocked carpets, which have thousands of small fibres electro statically bonded to an adhesive-coated backing.

Knitted Carpets: these carpets are produced by interlacing yarns I the series of connected loops. As in woven carpets, the pile and backing are produced simultaneously. Multiple sets of needles interlace the pile, backing and stitching yarns together in one operation.

Laying of carpets: Carpets in hotels and institutions are fitted from wall to wall and along the skirting. The carpets may be fixed by using glue or narrow strips of wood, which are tacked to the wall or sunken into a recessed area in the floor carpets along staircases must be fixed permanently with metal tacks to prevent accidents. Special treatments like flame proofing, moth proofing, water resistance and anti static treatment may be given to carpets to improve their function of durability and ease of maintenance. Disinfectant solutions may be also added in carpet treatment.

CARE AND MAINTENANCE: Carpets are easily soiled and damaged. They require regular and frequent care. Daily attention must be provided to remove stains and dirt from carpets. Dust, dirt, grit, organic substances and cigarette ash may cause damage. Furniture indentation and cigarette ash, residue shampoo and pests may damage the pile. Spot cleaning of stains immediately is essential to prevent penetration and built up stains. Dry suction, vacuum cleaning must be done every day to remove surface dust and grit. Scraps of paper, pins and other wastes must be brushed away before vacuuming. Shampooing of carpets is essential periodically. The frequency depends upon the type of traffic and nature of carpets. Most housekeeping departments may call for contract cleaning. Carpets must be tested before shampooing. Hand shampooing is very tiresome and ineffective. It is suitable for corners and stairs. Liquid or dry foam shampoo may be used. This traps the dirt and loosens it from the pile. Special brushes help to clean from the pile. Special brushes help to clean the pile. Spot cleaning of stains using apt reagents may be necessary before shampooing. Use diluted agents to prevent damage. Freshly spilt liquids can be absorbed or squirted with a soda siphon.

Shampooing: Carpet shampoo machine use one of the two types of shampoos: liquid ad dry foam. Shampoos are anionic synthetic detergents and should be diluted in the correct measures for optimal performance. Liquid shampoos produce very little foam but tend to leave a residue that traps dirt, making it necessary to shampoo the carpet frequently. Dry-foam shampoos are actually also liquids, but they leave dry foam on the surface of the carpet after application- hence the name. The foam loosens and lifts out the dirt, holding it on the surface of the carpet pile until it can be removed by dry section. Dry-foam shampoos contain some solvent in addition to the detergent to assist in the removal of solvent-soluble dirt. Carpets cleaned with a dry-foam shampoo require less drying time as well. Carpet shampoo machines are used to dispense both types f shampoos. A cylindrical brush woks the foam into the pile of the carpet.

Hot-water extraction this is done by a hot-water extraction machine. The machine uses a shampoo solution that does not form foam It injects the solution under high pressure through the pile to the back of the carpet, where it emulsifies and looses dirt and grease. Simultaneously, the machine sucks up the solution along with the now suspended dirt and grease. The use of a wet-suction machine after shampooing greatly accelerates the drying time. The dirty solution is deposited into a tank, from which it is discarded later. After the cleaning process, the carpet is left slightly damp and requires a very short drying time.

Dry powdering In this method, a powder containing absorbents such as sawdust, solvent and drying agents is sprinkled on the carpet and left or several minutes. The powder absorbs the grease and dirt and is removed with the help of a dry-suction cleaner. Waterborne dirt is removed by use of such a powder, therefore this method is not very efficient. The method cannot be strictly considered a deep-cleaning method in fact and should be used only in conjunction with the other carpet-cleaning methods.

Check Your Progress-I

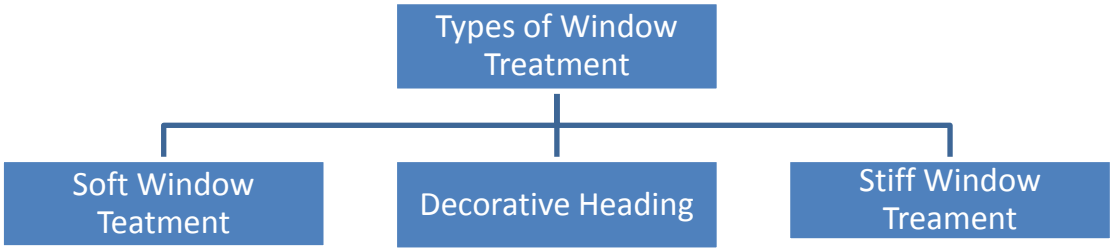
Q1.What is the component of carpet?

Q2. Discuss the factors to be considered while choosing flooring in hotel.

3.5 WINDOW TREATMENT

A **window treatment** is an interior decorating element placed on, in, around or over a window. Often, a goal of professional window treatment is to install the elements which enhance the aesthetics of the window and the room.

3.5.1 Types of Window Treatment



Types of window treatment

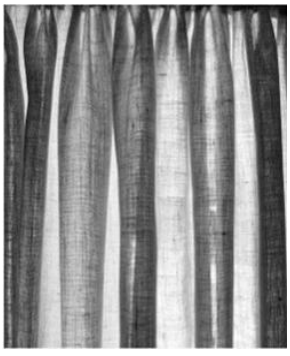
Soft Window Treatments: Soft window treatments comprise curtains, valances, swags, etc. Curtains often contribute more to the atmosphere of the room than any other item of furnishing. Plain, heavy curtains falling down to the floor can be used o create a formal setting. Short curtains made of light, brightly patterned fabrics are used to create an informal, relaxed atmosphere. Apart from creating the desired atmosphere, curtains give flexible control over privacy, heat, light and to some extent noise. The various fabric used for making curtains are cotton, linen, rayon, glass fibres, acrylic and silk for luxurious setting. Care should be taken to minimize their exposure to sunlight and airborne soils, as these reduce the curtains' functional life.
Good curtains are usually lined and heavy curtains re interlined. The lining helps the curtain to drape well and protect them for sunlight and airborne dust.
Curtains fulfil several important functions :

- They give flexible control over privacy, heat, light.
- They soak up noise in proportion to the area they cover, the thickness of the fabric and the depths of the folds.
- They can add colour an pattern to the décor.
- They cover bareness and furnish a room even without furniture.
- They can change the apparent size of a room or conceal architectural flaws.

3.5.2 Types of Curtains

Glass curtains: These are made of sheer fabrics of simple straight-line covering the entire window area with draperies.

Sash curtains: These are made of sheer fabrics and lightweight material with decorative ruffles. They are fixed on the frame or wall by special fixtures.
Casement curtains: These cover the entire window and have casing at both top and bottom



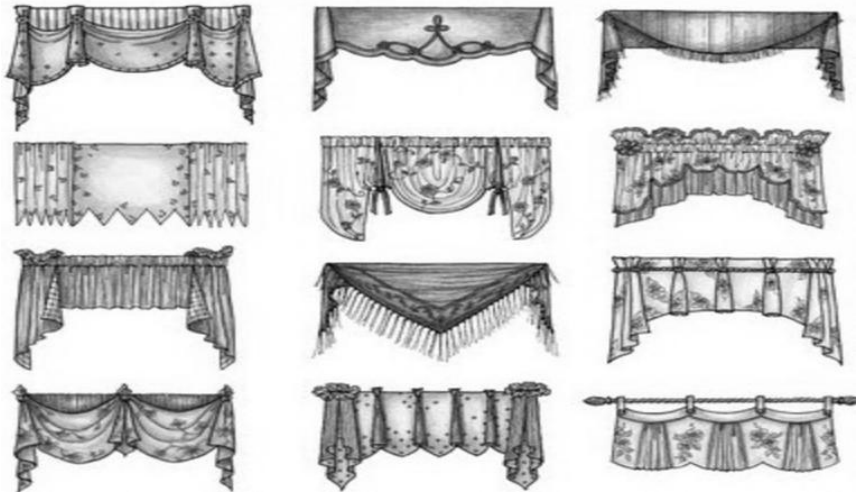
Criss cross curtains: Wide panels are mounted on walls so that they overlap on the top and are tied back.
Café Curtains: Short curtains that cover the portion of a window often hung on decorative rods by means of rings.

Cottage curtains: These are combination of café and sash curtains.
Tier curtains: Two or more horizontal rows of short curtains, which are mounted on rods so that they overlap.
Tie back: Either one panel can be ti back to one side or both the panels an be tied back to two sides. They are often tied back to the window frame.

Vertical draw curtain: These are mounted on traverse tracks so that they can be drawn open.

Vertical drop curtain: These are curtains, which move up and down and are found in theatres and cinema halls.

DECORATIVE HEADINGS
Curtain headings and accessories We shall now look at the various headings and accessories used with curtains.

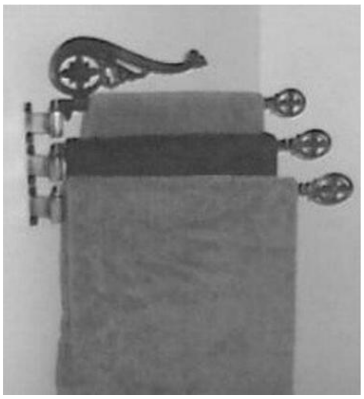


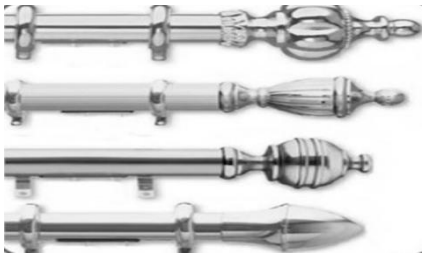
Pelmets and cornices: Cornices are box-like shapes used at the top horizontal portion of the drapery treatment to hide the poles and other hardware.

Valances: These are made of fabric that has been pleated, scalloped or ruffled. They should never exceed one-sixth of the window's height and should be about 8-12 inches in depth.

Swag and Tail curtains: These are heading at the top of the curtains and form an integral part of the decoration. This is generally meant to hide the curtain headings.

Drapery cranes: These are the appropriate hardware to use where installations have to be flexible.





Traverse and decorative rods: These are used in conjunction with runners, which are hooked onto the curtain. They come in many types. The conventional traverse rod is used with classic pleated draperies that pull away from the centre to either side.

Curtain rods: This is a very old curtain-hanging tradition. They come in many beautiful and durable designs, with a wide range of length options. Spacers in curtain rods extend outward from the wall for depth or to accommodate multiple rods. Both rod-pocket and tab- top curtains can be difficult to open or close on telescoping curtain rods. While hidden by many medium-weight and heavyweight materials, rods are visible through sheer curtains, and ring-top

Measurement and Installation of curtains: Curtains are fixed to the track by rings or hook and drop to the floor or windowsill. The fabric for the curtain should be a large piece hanging in folds with the entire pattern visible. It is better to avoid fabrics with white background in large establishments. The general width of the material may be 90 cms, 120 cms, 150 cms or more. The curtain width should be a minimum of one and half times the track width. Lining the curtain helps to protect from dirt or sunlight and provides good drape. Silk fabrics are expensive and usually used in luxury establishments in public areas and suites. Brocades, damasks, velvet's and a variety of weaves may be used. For the bedroom, a lighter material like cotton, linen, chintz, satin etc may be used. In bathrooms, a heavy window does not require curtains but nylon, plastic and glass fibre material are often used for shower curtains. Plastics may easily dry but may tear easily.

General points in curtain construction

- Velvet and pile fabric should hang with the pile running downwards.
- 15-30 cms should be allowed for hem and turning on each curtain.
- For floor length curtains, it should be 1. ould be one and half times or 2 times the width of the track.
- The curtain heading may be gathered, pleated or held with tapes.
- Lining should be fixed at the top and side of the curtain but not attached at the hem.
- Hems and sides should be hand sewn but 5 - 2.5 cms. above floor level to prevent friction.
- The minimum width for any curtain sh
- not machine stitched.
- Heavy curtains may have weights or chains at the hem to improve the hang.
- Flame retardant fabrics should be used in public rooms.
- Draw cords or curtain controls should be used to pull the curtain.

3.5.3 Selection of Window Treatment

When it comes to decorating, there is one element in the room that is often forgotten, and that is the **window treatments**. Most people will purchase curtains as an afterthought, something that needs to go up but doesn't really matter. The problem is the window treatments do matter and it should be an active decision when you are designing your decor. Selecting the right *window curtains* can be surprisingly complex. If you choose the wrong type or the wrong color, it can completely ruin the design that you have. Finding the best curtains for your room can lead to a flow in style that will have any professional interior designer borrowing from your idea for future projects. If you are trying to select window treatments for your home but are unsure of where to start, there are a few pointers that will help make finding the right window curtains much easier.

Keep the curtains in the room: This is actually a mistake that many people make. They find a curtain style and they put the same curtains into every room whether it looks good with the decor or not. The simple fact is each room can have different curtains, unless you are working with an open floor concept

Understand your privacy: One of the more popular window treatments that you can find are sheer drapes. While these are wonderful in many different areas, they are not the best style of drape to purchase if you want to have a little privacy since you can see through most sheer drapes. Bedrooms should never have sheer drapes solely, and neither should bathrooms for that matter. Instead, pair them with a darker drape or window covering that does just that; covers.

Understand the lighting: When it comes to windows, not all of them produce the same amount of lighting and this will affect the type of drapes that you use. Drapes that are heavy can block out a lot of light and this works well in a bedroom, especially bedrooms that offer amazing views of the sunrise. Sheer drapes are excellent for sun rooms that don't need a lot of privacy. Sheers provide a light airy feel that work wonderfully in many spaces. When you know the amount of light coming through the window, you can plan accordingly.

3.6 WALL COVERINGS

Wall coverings maybe purely decorative, in which case, ability to bring colour, pattern, texture, light or shade to the room maybe of the greatest importance. On the other hand the covering maybe required to give an easily cleaned and hygienic surface. The choice is very wide and the style should suit the purpose, furnishing and the architectural aspects of the room.

3.6.1 Selection of Wall Covering

Contribution to décor: The colour, texture and pattern will influence the apparent warmth and dimension of the room and the level and type of illumination used. The type of room, its existing size and decoration must be considered.

Ease of cleaning: Smooth, hard, impervious surface, preferably light coloured can be cleaned easily whereas textured surfaces tend to attract and hold dust

State of existing surface: Textured and patterned finishes can be used to mask poor surface Resistance to abrasion and knocks: - Hard surfaces will be best for this purpose.

Stain resistance: A non-porous surface has more resistance than porous ones.

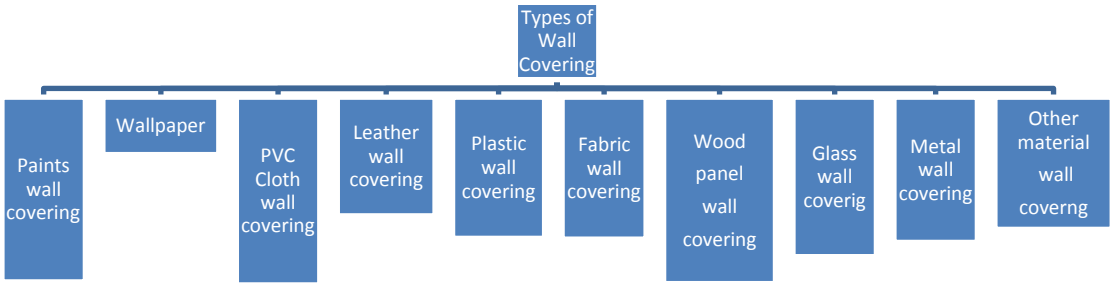
Durability: Surfaces subject to abuse, knocks, stains and abrasion require finishes that are resistant, can be cleaned easily, inexpensively restored or repaired whenever required.

Life expectancy: Where décor of the room is intended to change relatively frequently, less expensive finishes are appropriate.

Insulation: How-much-ever possible finishes with good sound insulation properties should be selected.

Cost: While comparing cost of different finishes, not only should the cost of the material and its application be considered; but also the cost of its damage restoration and expected frequency of complete redecoration should be borne in mind.

3.6.2 Types of Wall Coverings



Types of Wall Covering

3.6.2.1 Paints and Lacquers

Paints can be applied to almost any surface providing it is free from water, grease or dust and is of sound construction. E.g. plaster must be smooth, hard and not flaking from the underlying plaster or brickwork. As wall covering paints offer a wide choice

of types, colors, degrees of gloss and designs (murals can be painted). For window frames and sills, door and skirting boards, slightly glossy paint is required so that along with providing a contrast in colour and texture to the main wall finish, it acts as a protective coating, and thus contributing to décor of the room. It is relatively cheap, easily applied and cleaned and can give a textured and multicolored effect. The only disadvantage is that it shows soils (especially for matt paints) and wall imperfections (in gloss paints) more readily than any other wall covering.

Paints are typically mixture of four ingredients: pigments, additives, binders and solvents. Pigments are colors; additives give the paints the special properties such as resistance to rust and fungus. Binders hold the paints together. Solvents enable the brushing and rolling easier. Depending on the binders or vehicles used, paints can be broadly classified into two classes:

1 **Water base**

2. Solvents based

WATER BASED: Paints in these types the contents are mixed with water only. The various types of water based paints are

Lime wash - These are color washes based on lime (calcium hydroxide), inorganic alkalis, fast pigments, and few other additives. White wash are lime wash without pigments.

Distemper- This is superior to lime wash and is available in a wide range of color. It consists of powered chalk, some coloring pigment and glue mixed with water. It is economical even in new buildings.

Emulsion paints – They are water thinned but are based on dispersions of synthetic resins (e.g. polyvinyl acetate). They are tough, washable and wear resistant; and available in varying degrees of sheen, from matt, to semi–gloss, to silk finish. They are quick drying, low in odor and very suitable for redecoration of rooms, which cannot remain long out of use.

Cement - This types of paints consist of white cement, alkali fast pigments, accelerators, and other additives. It is available as dry power and can be found in several shades. It is economical, water resistant and durable in damp surfaces.

SOLVENT BASED PAINTS: These are generally made of six constituent. Base, filler, coloring pigments, vehicle, solvent and dryer.

The base: it is generally metallic oxide in powered form and is chief constituent of the paints. They may be white lead, red lead, zinc oxide, iron oxide etc

The filler: Cheap pigments added to the paints to reduce its cost.

Coloring pigments: A white or coloring pigment mixed into to get desire shades.

Vehicle: It is liquid acts as binders for the various pigments.

Solvent: It is a liquid that thins the consistency of the paints and evaporates when it applied to the surface so that it may solidify. Turpentine, pure oils, petroleum, spirit etc are used as solvent.

Dryer: one of the groups of materials containing metallic compounds that are used in small amounts for accelerating the drying of the paint film

The different types of solvent based paints available are:

Alloy paints – They are based on synthetic resins combined with vegetable oil such as linseed oil. The conventional types were natural resins, which are still used in primers and undercoat paints. Alloyed paints are generally easier to apply and have better durability and wearing properties than any other type. Polyutherene and silicone are sometimes included to give more scratch resistant surface. They are available in gloss, silk and flat finishes.

Multi-coloured paints – They are usually dispersions of cellulose colors in water. Each colour is present in separate "blobs "or "spots". The resulting effect depends on number of different colors, degree of contrast between them and the size and distribution of spots. This paint should be applied by spraying. It is extremely hardwearing and the multicolor effect helps in hiding irregularities and imperfections. It is usually applied on walls of corridors, sanitary accommodations, and similar areas, to give a stain and abrasion resistant finish, which can be washed and cleaned regularly.

Textured or Plastic paints – They are usually plaster based and are intended to give a textured or relief effect on surface. The texture is obtained by working over the material after application and while it is still wet, using combs, palette, knives, strippers, etc. Some are self-colored while others may require painting when they dry. The modern types are based on heavy-bodied synthetic resin emulsion and may be applied by spraying directly on the concrete or similar surfaces; thus eliminating the need of plaster.

Micro porous paints – they have a rubberized base which gives little gloss but offers elasticity and allowing movement when the surface expands or contracts.

Aluminum paints – Theses are use for painting wood and metal surface. Aluminum powder forms the base in this type of paint.

Anti-corrosive paints – They are generally used as metal-protection paints for preserving metallic structure against the adverse effect of whether fumes, corrosive chemicals, etc.

Bituminous paints – They are also used for waterproofing and protecting iron and steel. These paints usually consist of asphalt, bitumen and pitch dissolved in spirit or naphtha. These paints deteriorate when exposed on the direct rays of the sun.

Bronze paints – These types of paints is used for painting for interior or exterior metallic surfaces. Aluminum bronze, copper powder is the pigment use in this types of paints.

Enamel paints – This type of paint is made by adding pigments such as white lead or (Pb) or zinc white to a varnish. O drying, it forms a smooth glossy relatively hard and permanent film that is thin but solid. These paints are used both for interior and exterior.

Oil paints – This type of paint can be used for almost all surfaces, from wood and masonry to metal fabrics. Oil paints basically consists of two components – a base and a vehicle

Characteristics of Good Paints: The characteristics of good paint are:

- It should stick to the surface well and should be able to seal the porous plaster.
- Its consistency should provide easy workability.
- The thickness of the pint film should be adequate for good protection and décor of surface.
- The paint film should dry rapidly.
- The dry paint film should be able to with stand the effects of adverse weather for long time, without losing the gloss.
- It should offer resistance o cracking and flaking.
- It should possess good moisture maintenance.
- Its colour should not fade with the passage of time.

3.6.2.2 Wallpaper

They may be smooth or have a textured surface effect. This may be done by superimposing or interlacing of other substance to give a rough surface, or by clever designing when visual effect gives an apparent depth (dimensional effect). Smooth finishes are more resistant to dust and dirt than rough ones, but generally stains show more in smooth finishes.

The pattern maybe floral, geometric, abstract, striped, etc. The choice depends on the room's aspect, height, size and use of room. Large patterned papers tend to overpower and tend to make the room appear smaller than it actually is. Wastage is also higher as patterns have to be cut to match each other. In addition to conventional wallpapers, now many paper-backed materials are also available, e.g. fabrics, wood, veneers, plastic, etc.

The main types are :

Surface printed paper – A pattern is applied to the surface of the paper by hand printing and machine printing.

Screen-printing- A wide range of colors and designs are produced with usually a smooth surface finish. The cost is related to the design and the method of reproduction. The paper is not washable and damp wiping must be undertaken with great care. It can be easily soiled and stained.

Sponge able paper – They are specially treated during manufacturing to withstand water. They are similar in all other aspects to surface printed paper.

Washable papers – Similar to surface printed papers, but has a plastic coating giving it good stain resistance and enabling it to withstand washing.

Anaglypta – It's an embossed paper that is relatively inexpensive. Used to cover poor surfaces, it is normally painted after hanging. Its stain resistance and wash ability depends on the type of paint applied.

Lincrusts – A heavily embossed paper that may have a plastic coating, containing a paper backed textured composition and frequently stimulating wood paneling.

Oatmeal papers (wood chip) – Wooden floor or chips are sandwiched between two layers of paper. Its properties are similar to anaglypts paper.

Flock papers – A raised patterned pile is fixed by adhesive to a paper backing. The piles maybe cotton, silk, wool or synthetic. It attracts and holds dust and is expensive. The surface of the paper maybe damp wiped.

Metallic papers – Paper printed with gold or other metallic powder.

Food grain paper – Photographic reproduction of various food grains waxed during manufacture.

Paper backed hessians – Strands of hessians fixed to a paper backing to give the appearance of a hessian coverings. It is not washable but surface can be damp wiped. It is easily stained and damaged by abrasion. It's available in large variety of colors.

Paper backed woven grasses – Pieces of grass are fixed by adhesives to a backing of paper or silk.

Paper backed wools – Fine or coarse strands of wool in natural colors or bright dyes are laid in a parallel fashion on a paper backing. They give a warm effect and provide good insulation.

Advantages of wallpaper:

- Contribution to décor
- Ability to cover poor surfaces
- Insulation

Disadvantages of wallpaper:

- Costly
- Limited use
- Not abrasive resistant
- Stains easily
- Difficult to clean
- Cannot be easily restored
- Not very durable

3.6.2.3 PVC Cloths

They are woven cotton finished with a layer of PVC, and are used to form decorative panels on walls or doors. It maybe plain or quilted, involving the use of a foam stuffing and fixed by adhesive or metal studs. It produces a luxurious effect, improves sound and thermal insulation but is expensive and difficult to repair satisfactorily.

Leather wall coverings

They are extremely expensive but very decorative. They maybe padded and studded with brass studs. They are usually not used to cover the whole wall. It's effect wherever required can be stimulated with plastics.

Plastic wall coverings

They are available in large variety. Owing to their abrasion resistance, they are more hard wearing and easily cleaned than any other covering. As they are non-porous, tendency for growth of moulds is higher. Therefore, adhesive should contain fungicides, or fungicidal wash should be applied on the wall prior to applying the wall covering.

The various types are:

Paper backed vinyl – The vinyl may have the appearance of almost any material. E.g. silk, tweed, hessian, cork, grass paper, wood, stone or brick.

Fabric backed vinyl – Similar in appearance to the paper backed ones but is more durable.

Vinyl flock paper- These are velvet piles of flock, mostly synthetic, stuck in patterns over the back ground vinyl wallpaper.

Plastic wall tiles – Imitating ceramic tiles.

Laminated plastic – As a veneer or surface board, melamine is the resin frequently used during manufacture of these plastic laminates which may stimulate wood paneling. E.g.Formica.

Expanded polyutherene – It is used in sheets or tiles on walls and coiling to give heat and sound insulation, and helps eliminate condensation. It can be painted with emulsion paint or covered with paper. Spirits dissolves it and hence if oil paint is to be applied on it, it has to be lined with paper and given a coat of emulsion paint to act as a buffer. Polyutherene is inflammable, and hence it has to be treated to avoid fire risks.

3.6.2.4 Fabric Wall Coverings

It is possible to cover the wall surface with any fabric and its durability will depend on the type of fiber and the weave used during its manufacture. Fabrics used as wall coverings can be divided into two categories – Woven fabrics, e.g. hessian (used as wallpaper)

Hangings, e.g. tapestries, oriental carpets, drape. Fabrics chosen should not be liable to sag, buckle or stretch when hung permanently on the wall and should not collect excessive dust or dirt. Wild silk or other beautiful fabric maybe padded for heat and sound insulation but silks and tapestries are expensive, and thus found only in luxurious establishments only. Hessian, linen and some acetate viscose fabrics are cheaper and used more extensively. Fabrics are subject to attack by moths and mildew, hence proper proofing should be done.

3.6.2.5 Wood Paneling

Wood used for paneling are usually hard, well seasoned and of a decorative appearance. Most commonly types used are oak, mahogany, teak, etc. it may cover the wall from corner to corner. It may be solid or veneered and finished with wax polish, French polish or lacquer. It will last for years with little maintenance, providing precautions are taken in respect of dry rot and rot worm, though initial

installing cost will be high. Wood paneling is usually found in entrance halls, staircases, assembly halls, boardrooms and restaurant.

3.6.2.6 Glass Wall Covering

Glass can be used in the form of decorative tiles, mosaics, bricks or full sheet. Glass bricks allow light to pass through the wall itself. Colored opaque glass sheets or tiles maybe used in bathrooms. Mirror tiles are used to reflect light and to alter the apparent size of the room or corridor. Sometimes antique mirror tiles are used to give a duller surface with lesser reflection. Large uniform mirrors maybe used to cover the whole wall like over a vanity unit or dressing table or on a corridor wall. A glassless mirror is also available which is lighter (almost $1/5^{th}$ the weight of the conventional mirror), does not form mist and will not shatter if dropped. It consists of polyester film, vacuum coated with aluminum and mounted on a flat frame.

3.6.2.7 Metal Wall Covering

Metals may be used as wall coverings for their hygienic qualities. Copper and anodized aluminum are decorative and maybe used in areas such as bars where metals in combination with rows of bottles and interesting lighting create an impressive effect. Stainless sleet is used in tile form in kitchens where they present a durable, easily cleaned, hygienic surface. Metal skirting boards cover edges between wall and floor surfaces. Metal foil can be elegantly and sparingly used as a wall covering. Foil is available in variety if colors.

3.6.2.8 Other Materials

Various flooring materials can also be used as wall coverings. They provide different colors, patterns and texture. Though expensive, they are hardwearing and abrasion resistant. The various types are: -

- Linoleum
- Cork (in tiles or sheets)
- Carpets
- Marble
- Terrazzo
- Ceramic tiles
- Granite
- Bricks & stones (these can be used for exterior wall and left unplastered. Also used in fireplaces and chimney breasts to give a Decorative finish.)

Types	Method of Cleaning
Wall carpet, felt, flock (paper-baked), grass, cloth, hessian and jute, linen, silk	Brush down with a soft, long-handled all brush or use a vacuum cleaner with a brush attachment. To remove stains, dust lightly with white talc on cotton wool; leave for a few hours; then brush off. Do not use dry-cleaning reagents or upholstery cleaners, as they may cause discoloration and shrinkage here.
Flock (vinyl-backed)	Wipe the sponge wrung out in warm water. Do not rub flock.

Leather	Refer Unit 4 for cleaning techniques for different types of leather.
Paint-emulsion	Wipe down with sponge wrung out in mild detergent solution. Then wipe with cold water.
Paint-glossy silk-finish vinyl	Wash wall from bottom upwards using a sponge wrung out in mild detergent solution; wipe residue with cold water, working from the top down. If necessary, scrub gloss paint with a soft brush.
Polyurethane varnish	Wipe with a piece of chamois leather wrung out in mild detergent solution. Occasionally spray lightly with furniture polish (from an aerosol can) and rub down with soft cloth.
Tiles-aluinium and ceramic	Wipe down with sponge wrung out in mild detergent solution; rinse well. Dry with chamois leather. Clean grouting with a soft brush dipped in bleach solution and rinse.
Wallpaper	Brush or lightly vacuum; then gently sponge away marks with a mild detergent solution. For grease stains, dab on white talc lightly with cotton wool and brush off after a few hours
Wallpaper-washable vinyls	Wipe down with a sponge wrung out in mild detergent solution.
Wood paneling	Brush or vacuum and rub clean with soft duster. Periodically apply teak oil or cream. Do not use wax polish .

Cleaning procedures of wall covering

Protection: Life expectancy of a wall covering or finish can be increased and the cost of cleaning, Maintenance and restoration reduced in several ways:

- Selection of finish should be suitable for the degree of spoilage, abuse and damage expected.
- Select a covering that does not hold and attract dust, can be easily cleaned and restored if damage or stained.
- Use a more durable and easy to clean and maintain surface for the lower part of the wall.
- Use plastic sheets on less durable surfaces that are subjected to staining and knock.
- Use doorstoppers to prevent damage to surfaces behind the door.

- Use kick plates to protect the lower part of the door.
- Treat porous surfaces with soil retardant finish.

Check Your Progress-II

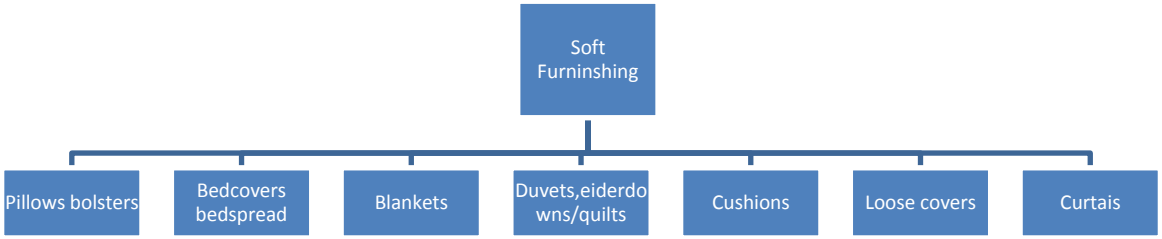
Q1. What is Screen-printing wall paper?

Q 2. Write some advantages and disadvantages of using wall paper.

3.7 SOFT FURNISHINGS

Soft furnishing are piece of items that are both necessary for comfort and convenience as well as decorative, providing colour, pattern and texture to the room. Soft furnishings include fibres that are used for curtains, loose covers, cushions, bedspreads and quilts. Some articles in addition provide warmth and comfort. Each article is subjected to variable amount of wear and tear.

3.7.1 Types f Soft Furnishing



Types of soft furnishing

Duvets/ Quilts: Provides a warm light bed covering but are quite expensive initially. They may be used as such or given a fabric covering. Satin, polyester, silk and good quality fabrics are suitable for the top layer of the quilts. Less slippery material like satin or linen may be used for under layer to prevent slipping. Duvets have become increasingly popular in hotels and are fast replacing the blanket, especially on double beds. They consist of a filling sandwiched or stitched in a fabric case with a changeable cover. The fillers may be duck/goose down, a feather mix or a combination of the two. The down feathers are the small, fluffy feathers. Although they are warmer, professional cleaning is necessary and they are heavier and more expensive than their synthetic counterparts. The synthetic filling is usually polyester fibres. These duvets are lighter and can be washed in large-capacity washing machines. Even if the establishment uses natural fillings to provide the best degree of comfort, a small stock of duvets filled with man-made fibres should be made available for anyone who has an allergy to the natural product. It is essential for the duvet to have an outside cover. Changing a duvet cover is a skill which is developed with practice. To save laundry costs and la bour, it is advisable to provide a covering sheer in conjunction with the duvet cover. Though it is common to have all of them in white, the duvet cover, the bottom sheet and valance could be part of the colour scheme of the guest room.

Care and maintenance of Duvets and quilts:

- Mend any tar and damage as soon as possible. Remove stains and grease marks immediately by dry-cleaning.
- Follow the manufacturer's instructions for regular cleaning of duvets and quilts.
- Always use duvets and quilts with easily launder able covers, so that these can be removed and washed separately.
- The cover of a duvet should be 2-4 inches larger than duvet on each side to give it room to expand. Smooth out duvets and quilts with a light hand while making the bed. When storing feather filled quilts and duvets use moth-repellent chemicals.

Pillows and bolsters: The best and most expensive pillows are filled with down. Others have a mixture of down and feathers and some are filled with manmade fibres. Foam pillow are suitable for people allergic to dust and feathers. Feather pillows don't last long. Foam pillows may also last for 10 years. Kapok, the cotton like fibre from the seeds of the silk-cotton tree, was earlier used as a filling for pillows; but it is not used for pillows in hotels now since kapok –filled pillows cannot be laundered or dry-cleaned. Bolsters are elongated pillow used on settees, divans and beds. In the past, they sometimes formed an under-pillow; but they are not use on the bed any more.

Care and maintenance of Pillow and bolsters:

- Dust and shake pillow lightly before making the bed
- Any damage to the ticking should be repaired immediately
- If the pillows have the synthetic filling, they may be washed individually on a regular basis. Pillows with natural filling should be dry-cleaned when necessary.
- Latex and foam pillow can be wiped clean.

Bedspread/Bedcover/Counterpane: These are purchased, considering appearance, durability and size. The colour and print should match the décor, and soil should not

show easily. The fabric should drape well and not crease easily (quilted for this purpose). The durability of the fabric is judged by the effect of laundering and constant use. The life expectancy may be totally disregarded in order to meet with a certain decorative colour scheme. Readymade bedcovers lack individuality so they are usually stitched and a number of styles are possible. Bedcovers should be interchangeable wherever possible.

Care and maintenance of Bedspread/Bedcover/Counterpane:

- Any damage should be repaired as soon as it is detected.
- Conventional blankets should be laundered or dry-cleaned when necessary.
- Stains grease marks should be removed by spot-cleaning or dry-cleaning.
- On a daily basis, while making the bed, gently shake out the blankets

Cushion: It may be used to increase the comfort of chairs and sofas and provide colour pattern and texture to the room. They may be fitted to form a seat or a back; or may be used loosely as scatter cushions. Shapes may vary from square, rectangular, circular, triangular, semi-circular to bolsters, which are elongated pillows. They will be filled with down, feathers, kappa, rubber, polyfill, urethane foam, thermo coal ball, silk cotton, foam plastic etc.

Care and maintenance: Cushions require constant attention

- Shake and tidy frequently
- Repair when necessary
- Brush and suction clean regularly
- Remove covers and wash or dry clean.

Curtains: Windows dressing is essential to enhance or obscure the shape of the window and improve the style and décor of the window and room. It provides privacy and thermal insulation, controls light, and helps in sound reduction. This can be achieved by the use of curtains. The line, colour, pattern and texture contribute to character and atmosphere of the room. Selection of fibre should be done with regard to its resistance to fading, abrasion, drape, dimensional stability and flame resistance. The exposure to sunlight and airborne soiling should be considered. Lining of curtains helps to reduce damage of fading and rotting. Curtains are subjected to abrasion by being pulled and drawn, brush against, rub along a floor or window frames and being laundered. The abrasion resistance depends upon the type of fibre selected and fabric construction. Loosely woven material tends to loose drape and constant hand drawing may cause loss of shape.

Check Your Progress-III

Q1. What is soft furnishing?

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Q 2. Write some care and maintenance of curtains.

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3.8 SUMMARY

As we know the housekeeping department is responsible of maintenance and aesthetic upkeep of the entire hotel but apart from that housekeeping also look after the interior of the hotel which includes floor finishes, wall covering, furniture, soft furnishing and many others. The chapter also discussed fibres and fabric construction. A student of housekeeping operation should have a fundamental knowledge of fibres, weaves, and finishes and so on.

3.9 GLOSSARY

Antiques: It includes pieces from an earlier period. Genuine antiques are, by definition, at least 100 years old considered an antique.

Backing: Natural materials like jute, hemp, glue and starch are used along with resin, synthetic rubber and polypropylene to form the backing. A secondary backing may be added to improve resilience.

Built in furniture: The piece of furniture is fitted ad fixed into architectural space, usually their cost is incorporated into the building cost.

Castor: these are the wheel fixed at the base or to the legs of furniture and equipment to make them mobile.

Cork: Cork tile is made from the outer bark of oak trees. The cork is ground into large granules, mixed with synthetic resins, and pressed into sheets, which are then cut into tiles.

Dado: A strong or more easily cleaned material used to surface the lower part of the wall approximately upto 150 cm height from the floor.

Duvet: quilts filled with down feathers or synthetic fibres.

Pile: The carpet pile absorbs most of the wear. It is called the face of the carpet, this is the part which is seen on the surface.

Under lay: The underlay acts as a shock absorber between the backing and the sub floor. It makes the carpet softer and provides insulation. Underlay may be made of felt, rubber, foam or jute with polypropylene backing.

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3.12 TERMINAL QUESTIONS

1. What factors would you keep in mind while selecting carpets for the banquet hall of a 5-star hotel?
2. What are the different treatments given to walls before painting for the paints to last long?
3. How are the carpets classified?
4. What is floor finishes? How will you care and maintain different floor finishes?
5. Write a note on:
    a. Selection of Floor Finishes
    b. Types of Floor Finishes
    c. Carpets
    d. Carpet Construction
    e. Types of Carpet
    f. Window Treatment
    g. Types of Window Treatment
    h. Types of Curtains
    i. Selection of Window Treatment
    j. Wall Coverings
    k. Paints and Lacquers
    l. Wallpaper
    m. Soft Furnishings
    n. Types f Soft Furnishing

UNIT: 04
COMPUTER APPLICATIONS IN HOTEL ACCOMMODATION

Structure

4.1 INTRODUCTION

Computer is an electronic device that is used for calculations, logical operations, and creation of database that can be utilized for future requirement. Computer has penetrated in all fields of business operations and hotel is not an exception to that. The computerization of hotel started after a considerable time from its invention. Computers have been invented to help people. The use of computers provides advantage over manual operations in many areas. Computer is capable of doing arithmetic calculations much faster than any manual method. Naturally, in any job involving volumes of calculations, computers are more useful. We can cite many examples of this advantage of using computers. Financial accounting, Payroll, Share accounting etc. involve consideration and clerical work. Computers do the calculations without errors. Even when the computer is making thousands of

calculations every second, not a single one will go wrong. The present chapter is aimed to provide basic knowledge of computer along with the property management system and its applications related with the front office operations.

4.2 OBJECTIVES

After learning the unit learner will be able to understand:

- What is computer?
- Components of computer
- Basics of computer
- Property Management System
- PMS application in Front Office
- Back office applications
- PMS interfaces

4.3 COMPUTER BASICS

A computer is often understood to be a device that 'Computes' or calculates numbers. A Computer is a high speed electronic device capable of performing arithmetic and logical operations. It sorts and executes a set of instructions, which enables it to perform such operations without manual intervention. A computer however does more than calculations rather it can edit text, generate pictures or graphs, translate languages, and even play games. Thus we can alternatively say that a computer is an electronic device having the ability to:

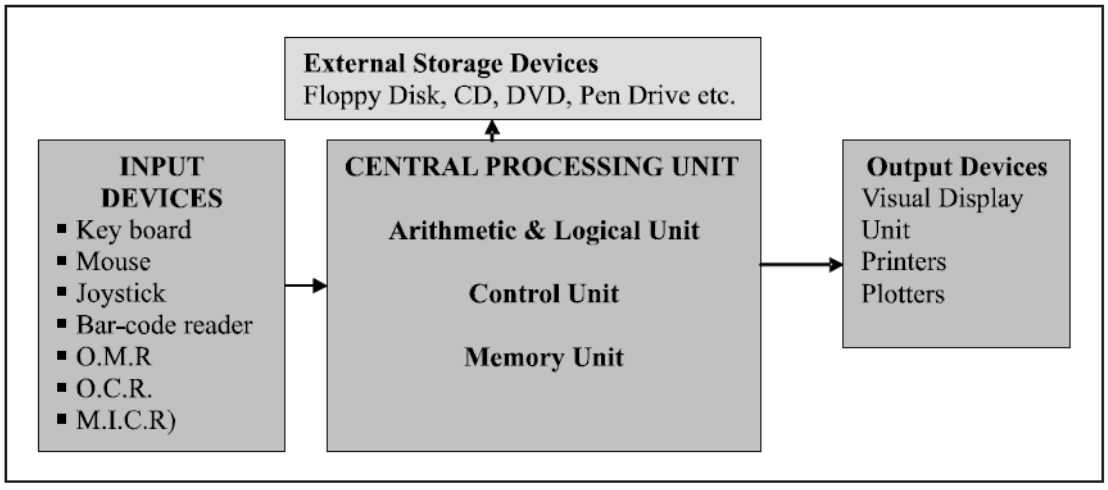
- Accept data supplied by the user
- Input ,store and execute instructions
- Perform mathematical and logical operations
- Output results according to the requirements of the users.

4.3.1 Components of Computer

The components of a computer can be studied under following heads:

- Input devices
- Processing and control unit
- Output devices
- Storage devices

The components of computer system can be represented as shown in figure below.



4.3.2 Input Devices

The input devices of a computer are used to key in the data for processing. These devices form the interface between the user and the system. It includes following:

- Key board
- Mouse
- Joystick
- Bar-code reader
- O.M.R. (Optical Mark Reader)
- O.C.R. (Optical character Reader)
- M.I.C.R. (Magnetic Ink character Readers)

Key Board: The key board is an input device. Using the key board we give input and instructions to the personal computer. The Key board resembles the type writer but there are additional keys that handle control functions. The computer key board has 3 categories of keys.

- **Alpha –numeric keys**: The alpha numeric keys comparison of alphabets (A to Z Upper and lower case) numbers (O-9) and other characters like space ><; % etc.

- **Special keys:** The special keys perform specific task ,some of the special keys are the "Enter' or the "Return" key , "Backspace" key ,del key, shift key , caps-lock key , ctrl key, alt key, insert key, num lock key .

- **Function keys:** The function keys are used to perform a set of operations by a single key stroke. The function keys can be used as short hand for a sequence of keystrokes configured accordingly. It is located at the top row of the key board. It has number F1 to F12.

Mouse: A mouse enables the user to manipulate a pointer or an arrow on the computer screen. When the user rolls the mouse across a flat surface the screen courser cursor moves in the direction of the mouse movement with a help o of a mouse the user can:

- Point to icons or tiny pictures that identify processing choices
- Draw lines and pictures on a screen
- Point to lined items in lists

Joystick: Joystick is designed in the shape of handles that rotate in 360^{o} arcs enabling the users to control screen figures. It has limited utilization in commercial data processing.

Bar-code reader: Bar codes are used to identify items data is coded in the form of light dark bars and coded spacing and thickness. The code is read by a device which transmits a laser beam and receives the reflection from the label. These pulses are compared and standard codes are stored in the computer. A Bar code is commonly seen on the back of any book published in recent times.

O.M.R. (Optical Mark Reader): The Optical Mark Reader is a device which can detect the presence or absence of mark on the paper. Light is incident on to the paper and the reflected light is detected. The presence of a mark is detected due to intensity and light being reflected from the mark.

O.C.R. (Optical character Reader): The Optical character Readercan not only detect a mark but can also recognize its shape and identify characters directly from source documents. The amount of light reflected differs depending upon the shape of the character and the Optical character Readercan detect and interpret these minor differences.

M.I.C.R. (Magnetic Ink character Readers): Magnetic Ink character Readers systems use special ink which can be magnetized to print characters that can be read and decoded by special magnetic devices. This system is widely used by banks for processing cheques.

4.3.3 Processing and Control Unit

The main processing component of a computer is central processing unit. The major components of central processing unit (CPU) are as under:

- Arithmetic & Logical unit (ALU).
- Control Unit
- Memory Unit

Arithmetic & Logical Unit: The Arithmetic & Logical unit (ALU) performs the actual calculations & comparisons. When the processing involves some arithmetic calculations or comparison this unit plays an important role.

Control Unit: The control unit of the CPU interprets various computer programs and sends directions to the other components of the computer system for required operations to be performed. The control unit keeps track of processing. It processes the input exactly as per the instructions given.

Memory: The memory unit or the main store holds the data and instructions intermediate and final results ready for output. The data and instructions are passed from the main store into ALU or to and from storage devices under the control of the control unit.

4.3.4 Output Device

The output device of computer includes visual display unit, printers, plotters and speakers for audio output.

The visual display Unit (VDU): The VDU device used for interactive processing i.e. data that is been keyed in is displayed on the screen or monitor. Messages and processed information are also displayed on the screen. The combination of keyboard & VDU is called "visual display terminal" most VDU that looks like a television picture tube the formation of images is controlled by the video controller .

Printers: The most common form of the computer output is the printer output also called as 'Hard Copy Output'. Printers are classified by how they print and how fast they operate. The examples of common types of printers are Dot matrix, Daisy wheel printer, Inkjet printer, Line printers, and Laser Printers.

Plotters: Plotters are used for high quality diagrams the plotters plot an entire drawing at a rate of several inches per second.

4.3.5 Storage Devices

The storage devices may be classified as internal storage device or external storage device.

Internal Storage Device: it includes main memory and RAM and hard disk.

Main Memory: The memory unit of the CPU is a place where programs or instructions and data are stored while processing. The device consists of a number of storage locations each storage location may be identified by a unique number which is called its address. During processing data may store in any location which is identified by the address of the location.

RAM (Random Access Memory): The RAM is the temporary storage device for programmes and data for the CPU to process. The chips that use metal oxide semi-conductor technology (MOS) are usually used in the primary storage section. The components are called RAM chips. RAM is a volatile type of memory. Information stored in RAM can be changed or erased if power is switched off; the information stored in RAM is lost

Hard Disk Drive:Just like a very large cassette in the music system. We have a hard disk our personal computer. now a days hard drives are available in flexible capacities like 20 GB, 40 GB, 80 GB, 120 GB 160 GB and so on. The hard disk drive is a non removable magnetic media drive. The hard disk is magnetic media which is sealed in contamination free jacket. We cannot remove this disk. The main advantage of having a hard disk is the space available.

External Storage Devices: An external storage device is used to store a large amount of data and information. It is safer to use external storage device as the data is protected from the infections of virus and does not lost due to crashing the hard disk.

Floppy Disks – Floppies are made of Mylar plastic coated with magnetic oxide. The flexible material is cut into circular pieces 5 ¼" in diameter. There are mini floppy disks 3 ½" in diameter. Since it is made of flexible tape unlike the hard disk, they are called "floppy disks". The circular pieces are packaged in 5 ¼" square plastic covers, the 3 ½ "floppy is covered by a rigid plastic case.

CD-ROM:CD-Rom (Compact disk read only memory) is a non erasable disk used for storing computer data. The disk is formed from a resin, such as polycarbonate and coated with a highly reflective surface, usually aluminum. Information is imprinted as a series of microscopic pits on the reflective surface.

DVD (Digital Versatile Disk): A digital versatile disk is more powerful storage device than a compact disk. The DVD can store data equal to 4.7 GB and more. It is generally used in storing and distributing movies.

Check Your Progress-I

Q1. Define computer?

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Q 2. Write a note on Input-Output devices.

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4.4 PROPERTY MANAGEMENT SYSTEM

A property management system is a computer based management system. There are different modules which are utilized to manage the particular operational area of the hotel. There is large number of venders that provides the PMS solution as per the requirement of the hotel. Every hotel opting for computerization should assess their need and level of automation depending upon he size, location, volume of business operations etc. A property management system consists of modules like front office module, housekeeping module, restaurant management system, back office module etc. The property management system should also be able to interface with individual interfaces like call accounting system, energy management system, point of sales, electronic door locking system etc.

The property management system works on networking of the hotel computers. The networking may be Local Area Network (LAN), Wide Area Network (WAN) or Metropolitan Area Network (MAN) depending upon the establishment. The terminals to access the property management system is located at the front desk, housekeeping, point of sales, stores etc. The each individual user is assigned a pre set assess to different modules depending upon the area of their work and level in the hierarchy of the hotel. The general manager and the system administrator have the full access to all modules of the property management system.

4.5 PMS APPLICATION IN FRONT OFFICE

The PMS front office applications have different modules for the efficient functioning of the department. The some of the common modules used in front office are as under:

- Reservation module
- Front Desk module
- Rooms module
- Cashier module
- Night Audit Module
- Setup Module
- Report generation
- Back office module

4.5.1 Reservation Module

The Reservations module is used to create and manage guest reservations, both making the reservations and maintaining the reservations for individuals as well as groups. The Reservations module includes the following features:

- Help the reservationists to handle the reservation query by providing the room status records when the date of arrival, date of departure, and type of guest room is entered in the computer.
- The module should be able to code the sold out days and days on which any room types are sold out in different colors.

- The module should be able to help in quick location of an existing guest reservation, with the ability to search by:
    - Guest Name
    - Company
    - Group ID
    - IATA Number
    - Confirmation Number
    - Starting and Ending Dates.
- The module should quickly display Room Availability up to 14 days of information at a time, by simply selecting a date.
- The ability to attach guest messages to each reservation to be delivered to the guest upon arrival.
- The automatic calculation of rates based on room type, rate code, arrival date, and the number of adults and children.
- The ability to create group blocks and rooming lists for standard groups, tour series and allotments.
- The ability to create special group rates.
- The ability to use the Rooming List feature for rapid reservation pick-up.
- The ability to pre-assign rooms to guests when making a reservation or at any time, using a graphical tape chart.
- The ability to define a "share with" reservation in group bookings.
- The automatic transmission of confirmation of a reservation via e-mail, fax or internet.
- The ability to post an advance deposit on a room.
- The ability to enter "remarks" which are visible upon reservation retrieval.
- The ability to reserve and track availability of service items such as rollaway, cribs and refrigerators.

4.5.2 Front Desk Module

The Front Desk Module provides the ability to manage guest registration. The following features/functions are included in the Front Desk module:

- The simple location of guest information for viewing, modification, or check-in procedures.
- The ability to edit the record of a checked-in guest with the in-house option, or search, view, and modify the guest profile.
- The use of a graphical room layout to see detailed location and status information.
- The ability to track all guest activity for the length of their stay.
- The ability to print registration cards on the fly.
- The attachment of individual, group, company or travel agent information to each folio.
- The attachment of guest messages to an in-house guest.
- The ability to automatically transfer to city ledger at check-out.
- The ability to create an incidentals folio.
- The ability to easily perform room moves.

4.5.3 Room Module

The Rooms module allows you to manage the hotel's rooms and floor plan. Following are some of the functions performed by this module:

- The display of hotel floor plan layout a single floor/wing at a time.
- Changing the display of the floor plan to show housekeeping, front desk, or specific room status.
- Providing real-time room status information for both housekeeping and front desk for all modules.
- The definition of status text and color codes by the user.
- Quickly changes floors/wings using scroll buttons.
- Reducing or enlarging the floor plan using Zoom buttons.
- The scheduling of rooms for future maintenance.
- The automatic adjustment of room inventory.
- The ability to schedule linen change in long term stayovers.
- The ability to track discrepant room status.

4.5.4 Cashier Module

The Cashier module is used to manage guest folios and perform check-out procedures. Following are some of the functions that can be performed with the Cashier module:

- The ability to quickly add incidental folios and move charges between folios with one touch.
- The location of any guest by room number or name.
- The management of all aspects of the guest folio from the Cashier Window, including debits, credits, adjustments, transfers and voids.
- The viewing or printing of folio detail or summary information, adding incidental folios, and performing the check-out function.
- The ability to quickly perform a check-out.
- The attachment of unlimited folios to each guest.
- The assignment of revenue types by user,
- The combination of any or all revenue types on one folio, or the creation of a different folio for each.
- Viewing only the departments to which the folio applies on the posting screen.
- Viewing transfer to and from folios side-by-side on the same screen.
- Printing folios at any time before, during or after check-out with four print options
    - Detail
    - Summary
    - department summary
    - department date/summary.
- Providing fully customizable folios using Microsoft Word.
- The direct posting to individual or group folios, or house accounts.
- The addition of memos or comments to posting, adjustments, and voids.
- The ability to perform a Fast group check-out.
- The adjustment of previous day postings on active folios.
- Voiding current day postings on active folios, with appropriate privileges.
- Checking out guest folios individually or all at once.
- Setting up posting keys for preset amounts.
- Performing postings, adjustment voids, and transfers on closed folios, without checking the guest back in.
- The ability to post and track sales of miscellaneous items such as stamps, sundries, t-shirts, etc.

- The ability to exchange foreign currency

4.5.5 Night Audit Module

The Night Audit module is used to balance the day's activity and complete the hotel's accounting functions for the day. Following are some of the features/functions included in the Night Audit module:

- The ability to perform routine tasks of posting room charges, changing non-guaranteed rooms reservations to no-shows, and changing the status of guaranteed no-shows with one touch.
- The automatic backup of data to optical disk.
- The ability to rebuild room availability in the event of a system failure.
- Direct access to the Reports module from Night Audit.
- The ability for the auditor to view a scrolled display of processing steps.
- The automatic posting of service charges like garage fees, crib fees, etc.
- The automatic posting of finance and recurring charges
- The automatic change of room status to out of order, if scheduled.
- The ability to automatically set the housekeeping status of occupied rooms to dirty.
- The batch printing of registration cards.
- The ability to process no show reservations with deposit payments.
- The ability to print customized reports automatically.
- The ability to archive permanent history.
- The ability to perform close out without a system shut down - other users may perform any task while the audit is running.

4.5.6 Setup Module

The Setup module is used to define the system settings. These settings allow for customization. Following are some of the key features/functions of this module:

- The ability to specify mandatory fields for required information and add custom information and forms.
- The customization of the market, source and rate codes and the definition of text for field selections.
- The customization of color codes.
- The designation of system access in relation to job function using unique user ID's and passwords for each employee.
- The inclusion of all software key codes in this module, including Foundation level, the ID codes for each software interface being used.
- The ability to set up system accounting to include departments, payment/currency types, tax rates, and house accounts.
- The ability to use house accounts to charge items that cannot be charged to the guest or for which no folio is required.
- The ability to specify rate codes, room rates, and rate availability.
- Complete multiple language support, with translations completed into German, Spanish, Italian and French.
- The restriction of rate availability by date range, date of the week, or minimum stay.
- The creation and maintenance of profiles for individuals, groups, companies, or travel agents.
- The ability to define phone extensions for each room, including multiple phone extensions for a single room.
- The ability to display all message prompts and screen text in the local language.

- The definition of foreign currency exchange rates.
- The creation of a list of all room features available throughout the hotel and attachment to specific room types and rooms.
- The ability to customize the reservations calendar with user-defined text for holidays, special events and reminders.
- The ability to set the length of time to retain guest folios and profiles for history.
- The ability to define request codes to anticipate the special needs of your guests. The codes can represent requests that are either chargeable or complimentary.
- The ability to create an inventory of service items, such as rollaways, cribs and refrigerators. The availability of these items is also tracked.
- The ability to use a mix of standard and user defined housekeeping codes.
- The ability to set up your printing environment and send specific reports to specific printers.

4.5.7 Report Generation

The Reporting module allows access to all system reports. Reports can be customized through the use of filters. Reporting is available in the following modules:

- Front desk
- Reservations
- Groups
- Deposits
- System Setups
- Rates
- Audit
- Housekeeping
- Back Office
- Travel Agent

The Reporting module allows for the creation and customization of multiple Marketing Letters and Mailing Labels.

4.5.8 Back Office Module

The Back Office module provides an integrated system for managing the hotel's financial and statistical information. The Back Office module can perform the following functions:

- Receivables
- Posting/Transfers
- Billing
- Close Period
- Aging Report
- Statements
- Daily Journal
- Reminder Letters (Dunning Letters)
- Account Setup
- History
- Guest stays listed by guest, company, group, travel agent and room number.
- Revenue totals shown by guest, company, group, travel agent, and room number.
- Guest stay may be selected and a folio reprinted.
- Folios are archived to optical disk after 90 days.
- Travel Agent

- Payable accounts may be setup for travel agents
- The night Audit process automatically posts commissions to payable accounts.
- This version of the software accommodates checks to be posted as manual checks. In a future version, the system will support printing travel agent checks and managing the payables system.

4.6 PMS INTERFACES

The property management system should be able to interface the other stand alone automated system such as:

- Point of Sales
- Call Accounting System
- Energy Management System
- Electronic Locking System

4.6.1 Point of Sales

The point of sales in hotel includes all restaurants, bars, discotheque, night club, health center, etc from where hotels sales its products and services other than accommodation. Each point of sales is equipped with the NCR, a standalone automated support for billings. The same can be networked with the property management system. When such integration is achieved the data is immediately transferred to other modules where it requires further processing. E.g. A credit sales in a restaurant to a resident guest will be immediately transferred to the cashier module where it will be posted in to their respective guest folio.

4.6.2 Call Accounting System

The hotel provides the telephone facility to the guest. The hotel guest can make local as well as long distance call from their rooms. The call accounting system is a standalone automated system which tracks all out going and in-coming call. When it is integrated with the PMS interface the posting of each call can be made automatically to the respective terminals accounts from where the call has been made. the call accounting system has following features:

- Identification of outward dialing
- Automatic route selection
- Call rating programme

4.6.3 Energy Management System

An energy management system is a standalone system that is designed to manage the operations of equipments responsible for maintenance of the comforts levels throughout the property. The energy management system shutdowns the operations of equipments not is use e.g. the weather control and lights are automatically turned off when the guest is out of their room.

4.6.4 Electronic Locking System

The electronic locking system is widely used now-a-days. This system helps the hotel to control the access to the guest room. The person having the proper card key coded for the specific room can enter the room. When the electronic locking system is networked with the PMS the front desk person will be able to code the room keys for the guest. The coding will be such that the same key will become non- functional after the check out time on date of departure.

Check Your Progress-II

Q1. What do you mean by PMS?

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Q 2. Write note on Modules of PMS.

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4.7 SUMMARY

Computer is an electronic device that is used for calculations, logical operations, and creation of database that can be utilized for future requirement. Computer has penetrated in all fields of business operations and hotel is not an exception to that. The computerization of hotel started after a considerable time from its invention. Computers have been invented to help people. The use of computers provides advantage over manual operations in many areas. Computer is capable of doing arithmetic calculations much faster than any manual method. Naturally, in any job involving volumes of calculations, computers are more useful. We can cite many examples of this advantage of using computers.

Computers are playing a vital role in almost every walk of life. The present chapter has introduced the basic knowledge of computers. The chapter started with a introduction of computers basics which includes the component of the computer system where we have discussed about the component of computers like input devices, processing units, output devices and secondary storage devices.

The chapter also discussed about the Property Management System. The PMS front office application is discussed in detail along with the PMS interfaces with the stand alone automated systems like Point of sales, energy management system, call accounting system and electronic locking system.

4.8 GLOSSARY

Alpha –numeric keys: The alpha numeric keys comparison of alphabets (A to Z Upper and lower case) numbers (O-9) and other characters like space ><; % etc.

Arithmetic & Logical Unit: The Arithmetic & Logical unit (ALU) performs the actual calculations & comparisons. When the processing involves some arithmetic calculations or comparison this unit plays an important role.

Bar-code reader: Bar codes are used to identify items data is coded in the form of light dark bars and coded spacing and thickness. The code is read by a device which transmits a laser beam and receives the reflection from the label.
Call accounting system: The hotel provides the telephone facility to the guest. The hotel guest can make local as well as long distance call from their rooms. The call accounting system is a standalone automated system which tracks all out going and in-coming call.

CD-ROM:CD-Rom (Compact disk read only memory) is a non erasable disk used for storing computer data. The disk is formed from a resin, such as polycarbonate and coated with a highly reflective surface, usually aluminum. Information is imprinted as a series of microscopic pits on the reflective surface.

Control Unit: The control unit of the CPU interprets various computer programs and sends directions to the other components of the computer system for required operations to be performed. The control unit keeps track of processing. It processes the input exactly as per the instructions given.

DVD (Digital Versatile Disk): A digital versatile disk is more powerful storage device than a compact disk. The DVD can store data equal to 4.7 GB and more. It is generally used in storing and distributing movies.

Electronic Locking System: The electronic locking system is widely used now-a-days. This system helps the hotel to control the access to the guest room. The person having the proper card key coded for the specific room can enter the room.

Energy Management System: An energy management system is a standalone system that is designed to manage the operations of equipments responsible for maintenance of the comforts levels throughout the property..

External Storage Devices: An external storage device is used to store a large amount of data and information. It is safer to use external storage device as the data is protected from the infections of virus and does not lost due to crashing the hard disk.

Floppy Disks – Floppies are made of Mylar plastic coated with magnetic oxide. The flexible material is cut into circular pieces 5 ¼" in diameter. There are mini floppy disks 3 ½" in diameter. Since it is made of flexible tape unlike the hard disk, they are called "floppy disks". The circular pieces are packaged in 5 ¼" square plastic covers, the 3 ½ "floppy is covered by a rigid plastic case.

Function keys: The function keys are used to perform a set of operations by a single key stroke. The function keys can be used as short hand for a sequence of keystrokes configured accordingly. It is located at the top row of the key board. It has number F1 to F12.

Hard Disk Drive: Just like a very large cassette in the music system. We have a hard disk our personal computer. now a days hard drives are available in flexible capacities

like 20 GB, 40 GB, 80 GB, 120 GB 160 GB and so on. The hard disk drive is a non removable magnetic media drive.

Input Devices: The input devices of a computer are used to key in the data for processing.

Internal Storage Device: it includes main memory and RAM and hard disk.

Joystick: Joystick is designed in the shape of handles that rotate in 360^{o} arcs enabling the users to control screen figures. It has limited utilization in commercial data processing.

Key Board: The key board is an input device. Using the key board we give input and instructions to the personal computer.

M.I.C.R. (Magnetic Ink character Readers): Magnetic Ink character Readers systems use special ink which can be magnetized to print characters that can be read and decoded by special magnetic devices. This system is widely used by banks for processing cheques.

Main Memory: The memory unit of the CPU is a place where programs or instructions and data are stored while processing. The device consists of a number of storage locations each storage location may be identified by a unique number which is called its address. During processing data may store in any location which is identified by the address of the location.

Memory: The memory unit or the main store holds the data and instructions intermediate and final results ready for output. The data and instructions are passed from the main store into ALU or to and from storage devices under the control of the control unit.

Mouse: A mouse enables the user to manipulate a pointer or an arrow on the computer screen.

O.C.R. (Optical character Reader): The Optical character Readercan not only detect a mark but can also recognize its shape and identify characters directly from source documents. The amount of light reflected differs depending upon the shape of the character and the Optical character Readercan detect and interpret these minor differences.

O.M.R. (Optical Mark Reader): The Optical Mark Reader is a device which can detect the presence or absence of mark on the paper. Light is incident on to the paper and the reflected light is detected. The presence of a mark is detected due to intensity and light being reflected from the mark.

Output Device: The output device of computer includes visual display unit, printers, plotters and speakers for audio output.

Plotters: Plotters are used for high quality diagrams the plotters plot an entire drawing at a rate of several inches per second.

Point of sales: The point of sales in hotel includes all restaurants, bars, discotheque, night club, health center, etc from where hotels sales its products and services other than accommodation.

Printers: The most common form of the computer output is the printer output also called as 'Hard Copy Output'. Printers are classified by how they print and how fast they operate. The examples of common types of printers are Dot matrix, Daisy wheel printer, Inkjet printer, Line printers, and Laser Printers.

Property Management System: A property management system is a computer based management system. There are different modules which are utilized to manage the particular operational area of the hotel. There is large number of venders that provides the PMS solution as per the requirement of the hotel.

RAM (Random Access Memory): The RAM is the temporary storage device for programmes and data for the CPU to process. The chips that use metal oxide semi-conductor technology (MOS) are usually used in the primary storage section. The components are called RAM chips.

Special keys: The special keys perform specific task ,some of the special keys are the "Enter' or the "Return" key , "Backspace" key ,del key, shift key , caps-lock key , ctrl key, alt key, insert key, num lock key .
Storage Devices: The storage devices may be classified as internal storage device or external storage device.

The visual display Unit (VDU): The VDU device used for interactive processing i.e. data that is been keyed in is displayed on the screen or monitor. Messages and processed information are also displayed on the screen. The combination of keyboard & VDU is called "visual display terminal" most VDU that looks like a television picture tube the formation of images is controlled by the video controller .

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4.10 TERMINAL QUESTIONS

1.Define computer?
2.What are the parts of computer?
3.What are the input devices?
4.What is printer?
5.Explain the following modules of a Property Management System:
   a. Reservation module
   b. Cashier Module
   c. Front Desk Module
   d. Night audit module
   e. Reports

UNIT: 05
PLANNING AND EVALUATING FRONT OFFICE OPERATIONS

Structure

5.1 INTRODUCTION

The hotel entrepreneurs are interested in knowing the performance of the hotel. Most of the hotel calculates the average daily rate to find the performance of the hotel in terms of revenue generation. Hoteliers have realized that along with volume of business they should also concentrate on revenue generation on each sale. In the previous chapter we have studied how tariff structure is determined in hotels. In this chapter we will study the techniques used to maximize the revenue generation.

Yield is the ratio of revenue realized to potential revenue. Airline industry is pioneer to introduce the concept of yield management. The concept is based on basic economic principle of demand and supply. In this chapter we will study the various tools used to practice yield management. In later part, we will study room availability forecasting.

5.2 OBJECTIVES

After reading this unit the learner will understand:

- What is Forecasting – benefits, data required for forecasting?
- Identify the techniques of forecasting
- Identify and calculate the data required for calculating forecasting room availability.
- How to calculate forecast formula
- Understand The various factors for evaluation of the performance of the hotel

5.3 FORECASTING

One of the most important task performed by the front office manger involves forecasting demand for the hotels guestroom, these forecast if accurately done can be very effective in maintain the room and revenue management.

According to Dictionary forecast means ―to say what will probably happen in future‖, i.e. ―forecasting is a technique to estimate about the future, based on historical figures, expectations, trends, and/or experience, a certain value of an uncontrollable variable for a certain future period of time.

From the above definition it is clear that to forecast one requires to analyze and study the past records and demands, but, it cannot be as simple as it sound by coming up with a figure, only by considering the historical data‘s or figures, without adjusting to other variables like competition, image and risk of the country, interest rates, inflation, exchange rates, and other economical factors etc. Therefore, a person who forecasts shall adjust the forecasted figure to the today‘s realities and expectations before forecasting anything.

5.3.1 Benefits of Forecasting

Forecasting plays a very important role in the future planning, benefits of forecasting in the hotel industry are:

1. It helps the reservation manager to project the future volume of business and the revenue that would be generated by the hotel.
2. Staff requirement in each department for smooth functioning of the hotel.

3. Minimum inventory required by each, department for the smooth functioning of the hotel.
4. Allocation of resources to serve the guests in the hotel in the best possible way.
5. Maintenance and replacement required by the furniture, fixtures and finally by the property.
6. Special arrangements to be made for the guest especially for groups, commercially important people (C.I.P's) and VIP's.
7. The reservation forecast will provide the necessary data to the FOM so as to practice Yield Management.
8. Forecasting provides information about the lean days when occupancy is low so that the sales department may take necessary action to attract business during that period.
9. The forecast data also give information about the sold out dates, so that the reservation agent does not accept any reservation for those dates.
10. Forecasting also helps in taking selective overbooking.

5.3.2 Information Required For Forecasting

A forecast can serve as a guide in determining operational cost and thus every effort should be made to ensure accurate forecasting, as it is a difficult skill to develop and can be acquired with experience, effective record keeping and accurate calculations. Therefore experienced FOM's have found out that several types of information need to know or should be aware of before making the room availability forecast. This information is as under:

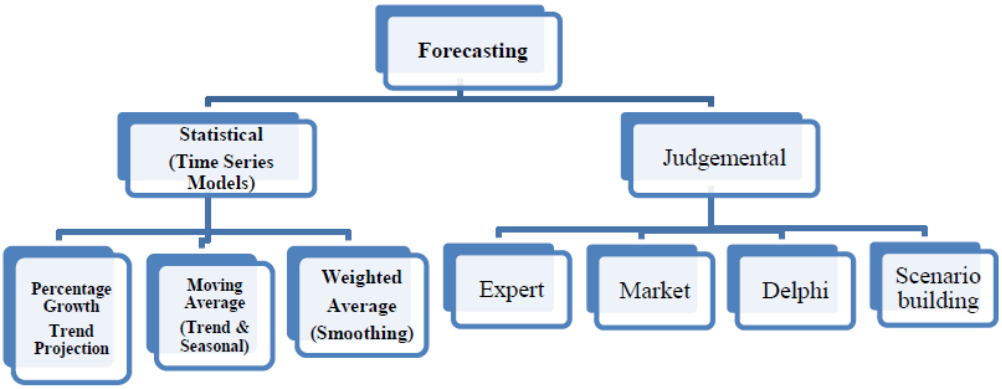
1. Thorough and detailed knowledge of the hotel and surroundings areas
2. Market profile of the people to whom the hotel provides services
3. Occupancy data for the past several months and for the same period of the previous year
4. Reservation trends and history of reservation lead time between expected date of arrival and date of reservation also called reservation horizon
5. A list of special events scheduled in the geographical area
6. Business profile of specific groups booked for the forecasted data
7. Number of Non guaranteed and guaranteed reservations and estimate of no snows
8. The percentage of rooms already reserved, cut off dates for rooms blocks held in the forecasted dates
9. Impact of hotel groups and their potential influence on the forecasted dates
10. Plan of renovating the hotel that would change the number of rooms available for sale
11. Construction or renovating plans for competitive hotels in the area.

5.3.3 Forecasting Techniques

There are several forecasting methods or techniques ranging from the common and simple method of using last year's actual figures as the forecasting tool for the coming year's numbers to complex approaches such as econometric.

Forecast methods are divided into:

- Judgmental/ Qualitative method
- Statistical/Quantitative method



Judgmental / Qualitative method: These types of forecasting methods are based on judgments, opinions, intuition, emotions, or personal experiences and are therefore subjective in nature. They do not rely on any rigorous mathematical computations. Types of Qualitative Method are:

- Expert Opinion
- Market survey
- Delphi Technique
- Scenario Building

Expert Opinion: In this technique group of managers meet, discuss and collectively develop a forecast.

Market Survey: The approach that uses interviews and surveys to judge preferences of customer and to assess demand

Delphi Technique: It is a systematic interactive forecasting method for obtaining forecasts from a panel of independent experts, .the selected experts answer questionnaires in two or more rounds. After each round facilitator provides an summary of the expert‘s forecast from the different rounds as well as the reason they provided for their judgments, thus participants are given the chance to revise their earlier answers in light of the replies of other member of the group, it is believed that during this process the range of the answers will decrease and the group will finally reach towards the correct answer and finally the process is stopped after the number of rounds and after reaching consensus stability of result and the mean or median scores of the final round gives the result. In short it can also be called as approach in which forecast decision is taken through consensus agreement reached among a group of experts

Scenario Building: It is the process of analyzing all possible future events by taking into consideration all alternative possible outcomes or scenarios, the analysis is designed to allow improved decision making by allowing more complete consideration of outcomes and their implications.

Statistical /Quantitative Method: These types of forecasting methods are based on mathematical (quantitative) models, and are objective in nature. They rely heavily on mathematical computations. In the scope of this very course, Rooms Division Managers forecast mainly Room Demand for a future period of time measured either in:

- Number of Rooms

- Number of Room Nights
- Number of Guest Nights

• **Room Nights** = Occupancy Rate * Hotel Rooms * Average Length of Stay • **Guest Nights** = Occupancy Rate * Hotel Rooms * Average Guest per Room

Forecasting demand in room nights and/or guest nights is a better measurement compared to number of rooms. For, room nights and /or guest nights underlies more than one demand dimension at the same time and hence is more meaningful. Types of Quantitative Method are:

- Percentage growth period
- Moving average period
- Weighted average period and others like Regression analysis, econometrics etc that are more complicated

1. **Percentage Growth Method**: The assumption according to this method is that data available follows either an increasing or decreasing trend. Therefore this method shall be used for forecasting, only when data matches this assumption. Percentage growth between two periods i.e. first & the last year, is identified and applied to the previous year of the year for which forecasts are to be made.

2. **Moving Average Method**: The Moving Average Method similar to the ―Percentage Growth Method‖ assumes an increasing or decreasing trend. This forecasting technique aims at smoothing data and adjusts it as to minimize volatility reflected in a high standard deviation between different records in the same data range.

The most common used moving average is the Double moving average, which calculates a third column by taking averages of couples of any two successive years, Later, the percentage growth method would be applied to the smoothed data, Lastly, come up with the forecasted value:

3. **Weighted Average Method**: The Weighted Average Method assigns Certain Importance Factor or Coefficient to each historical Value. Later, the forecasted value shall be computed by dividing the weighted data to its coefficients by the sum of coefficients.

- Assigning weights or coefficients is and art that depends on experience, thorough analysis of past figures, and performances. Yet, whatsoever coefficients chosen, there is always a certain subjectivity factor that might affect eventually the forecasted figure!
- One of the most common types of the weighted average method is the simplest method, which assigns the lowest weight to the oldest data in a sequential order.
- Though the simplest weighted average method is straight forward, assigning least weight to oldest data assumes that:
- The factors that affects the oldest demand diminishes through time and hence are not important as far as the future period to be forecasted is concerned
- The factors and hence the conditions that created the last period‘s demand are assumed to continue heavily playing an important role in the next period to be forecasted!

- Since the above mentioned assumptions might not be valid, in most of the cases, hotels shall adjust the coefficients attributed in the simplest weighted average method in a way that mostly puts more weight on factors thought to affect next period‘s demand and less weight to those which would be considered relatively unimportant!!
- Another possibility is that hotels shall, after finding a forecast from the simple weighted average method, adjust to experience, trends, and fact.

4. **Time Series Analysis**: The Time Series Method tries through Regression Analysis to come up with a Line that minimizes the distance between any Actual Point on the Curve and its Corresponding Point on the Line (Least Square Method). This Technique is refereed to as the Regression Analysis. After finding the Equation of the Line (i.e. f (x) = y = a * x + b), we try to forecast the independent Variable. Managers shall use forecasting methods with extreme precautions, and shall consider first the assumptions underlying each Forecasting Method to be able to find a good forecast. After running a statistical forecast, managers shall adjust it to trends, expectations, and opinion surveys. (I.e. shall consider judgmental forecasting)

5.3.4 Forecasting Room Availability

Availability of room is the actual or projected number of rooms that are still not occupied or reserved on a given date. Because rooms continually turn over, it becomes non feasible to calculate the exact number of rooms that will be unoccupied. A room availability report is based on an estimate calculated with the help of information available from past reservations and occupancy. Following information is required to prepare an accurate room availability report.

Room Inventory - : It is the total number of rooms that could possibly be sold on a given date is called is called room inventory. The inventory does not include rooms that are out of order for maintenance or redecoration or rooms that are currently under construction.

Previous Night Occupancy - : It is the total numbers of rooms that were occupied by the guest on the previous night.

Departures: - A departure are those guest who are scheduled or planned to be check out on the current date.

Reservations - : This report must take into consideration the total numbers of rooms for which reservations have been received for the current date.

Under Stay: - : Those guest who were actually supposed to stay in the hotel but checked out before their scheduled departure date due to any reason is called under stay.

Over Stay: - :Those guest who stays or remains in the hotel beyond the scheduled departure date is called over stay.

Cancellation: - :Those reservations which were made by the guest but are canceled due to some reasons.

No-Shows - : Besides cancellation there is a small percentage of people who make reservations and never check – in. The average number show rate is about 5% of reservations.

Early arrivals: - : There are chances also that a guest will check in prior to the estimated arrival date.

5.3.5 Data required For Forecasting Room Availability

Forecasting Room Availability process generally based on historical occupancy data. To facilitate forecasting, the following daily occupancy data should be collected:

- No. of expected room arrivals
- No. of expected room walk-ins
- No. of expected room stayovers (rooms occupied on previous nights that'll continue to be occupied for the night in question)
- No. of expected room no-shows
- No. of expected room under stays
- No. of expected room check-outs
- No. of expected room overstays

These data's are important for forecasting the room availability. Since they are used for calculating several daily operating ratios that help to identify the room position. Most statistical ratios(mathematical expression of a relationship between two numbers that result from dividing one by the other) that apply to Front Office operations are expressed as percentages. Managers should look for consistency in these ratios as without consistency in forecasting ratios the evaluation of the hotels performance will be difficult.

5.3.6 Useful Forecasting Data

The following ratios and percentages are useful for the FOM for forecasting:

Percentage of No Shows: The percentage of no shows indicates the proportion of reserved rooms that were booked for the guest but the expected guests did not arrive to occupy the reserved rooms on the expected date of arrival. This ratio helps the front office manager to decide when and if the rooms can be sold to walk in guests. The percentage of no shows is calculated by dividing the number of rooms no show for a specific period of time by the total number of expected rooms arrivals for that same period.

$$\textit{Percentage of No Shows} = \frac{\textit{Number of the Room of No Shows}}{\textit{Number of Room Reservations}}$$

Some hotel's FOM also keep in mind reservation in terms of the guaranteed and non guaranteed reservations, as non guaranteed reservations typically have a higher chances of no show percentage than guaranteed reservations since the potential guest do not have any obligation to pay if they do not register at the hotel. Proper forecasting of no shows rooms also depends on the hotels mix of business. For E.g.: corporate groups have a generally much lower no show percentage that other type of groups or FIT's or individual businesses.

Percentage of Walk-ins: The percentage of walk-ins is calculated by dividing the number of occupied rooms by walk-in guest by the total number of rooms‘ arrivals for the same period.

$$Percentage\ of\ walk\ in = \frac{Number\ of\ the\ Room\ walk\ in}{Total\ Number\ of\ Room\ Arrivals}$$

occupy those rooms available that are kept for guests with reservations but they have not come (cancel or no-show), therefore hotels can sell those rooms to walk –in‘s guest at a higher rate, as these guests have less opportunity to consider the alternate property. A walk-in guest room sale thereby helps the hotel to improve both its occupancy and room revenues. However, from a planning perspective, it is generally considered better to have reservations in advance than to rely on walk-in business.

Percentage of Overstay: Overstay rooms represents those rooms which are occupied by those guests who wants to stay beyond or more than their expected departure dates. Overstay guests may have arrived with guaranteed reservations or non guaranteed reservations or as walk in‘s. The percentage of overstay is calculated by dividing the number of overstay rooms by expected room departures for the same period.

$$Percentage\ of\ Overstay = \frac{Number\ of\ overstay\ Room}{Number\ of\ expected\ checkouts}$$

Where the number of expected check outs equal to the number of the actual check outs minus under stays plus overstays. To help regulate room overstays the Front desk agents are trained to verify the arriving guest‘s departure date at the time of check in. Such verification can be critical especially when the hotel is at or near a full occupancy and there are no provisions for overstaying the guest.

Percentage of Under stay: Under stay represents rooms occupied by guest who checks out before their scheduled departure date. Under say guests may arrive at the hotel with guaranteed reservation or as walk in guest. The percentage of under say is calculated by dividing the number of under stay rooms for a period by total number of departure rooms for the same period.

$$Percentage\ of\ Understay = \frac{Number\ of\ Understay\ Room}{Number\ of\ expected\ checkouts}$$

Guest when leave before their expected date of departure creates empty rooms which are difficult to fill in the last moments thereby leading to loss of room revenue As under stay rooms represent permanent loss of room revenue, while, overstays may boost room revenues. It is a privilege when the hotel is having low occupancy In order to regulate both, front office staff should:

- Confirm or reconfirm guest‘s Date of Departure at the time of registration
- Present an alternate guestroom reservation form to registered guest to overstay guests
- Review guest history
- Contact potential overstay guests, especially those who have not left by check-out time

5.3.7 Forecasting Formula

Once the FOM is ready with the statistics, the number of rooms available for sale on any given date can be calculated by using the following formula:

Total Number of guest room
(-) Number of out order rooms
(-) Number of rooms reservation
(+) Number of rooms reservations (x) % of no show
(-)Number of rooms over stays

_____
Number of rooms available for sale

Note that this formula does not include walk-ins. They are not included because the number of walk-ins a hotel can accept is determined by the number of rooms that remain available for sale. If a hotel is full due to existing reservations, stay over and other factors. It will not accept walk-ins.

As an example, consider the hotel is a 140 room property where on April 20th there are 5 out of order rooms and 55stay over. On that day, there are 42 guests with reservations scheduled to arrive since the percentage of no-show has been recently calculated at 18.06 % the front office manager calculates that as many as 8 guests with reservation may not arrive (42 x .1806=7.59, rounded to 8). Based on historical data, 6 under stays and 15 over stays are also expected. The number of rooms projected to be available for sale on April 20th can be determined as follows.

Total number of guest rooms	140
(-) Number of out of order rooms	(-) 5
(-) Number of stay over	(-) 55
(-) Number of room reservation	(-) 42
(+) Number of room reservation X Percentage of No Show	(+) 8
(+) Number of rooms under stay	(+) 6
(-) Number of rooms over stays	(-) 15
= Number of rooms available for sale	39 rooms

5.3.8 Types of Forecasting

The accuracy in the forecast is essential because it is the main element of the pricing/room allocation decisions; Forecasting is generally done by front office manager or by Revenue Manager and is done in different ways; few hotels use the manual excel-based approach for forecasting, while others use automated systems called Revenue Management systems. Many hotels have decided to have automated system so as to have accurate forecasting as inaccurate forecasting leads to incorrect decisions and severely affect revenues and profit margins. Accurate Forecasting is highly important for any hotel operations. Types of forecasting may be divided into three categories:

- **Occupancy Forecast:** Revenue Manager predicts the occupancy level.

- **Demand Forecast:** Revenue Manager produces the unconstrained demand for the hotel (hotel occupancy level if no restrictions on capacity and price is applied).

- **Revenue Forecast:** Revenue Manager estimates the revenue to be generated.

Different methods/approaches that are used by hotels to forecast demand; these can be divided into two categories: historical booking models and advanced booking models. Historical booking models consider only the arrivals or the occupancy time series, and apply time series models on these. No use is made of the reservations data. The advanced booking approach, on the other hand, makes use of the reservations data, and utilizes the concept of "pick-up". For example, most major hotel chains use linear-programming-based models that require detailed forecasts by day of arrival, length of stay, and rate category. Hence, forecasting is estimated as such: a hypothetical automated system that scans historical bookings, occupancy patterns, internal and external events, and reservation and rates information and fits quantitative forecasting models to the data. Using the fitted models, the revenue management system arrives at predictions, which are then used as an input in making rate and allocation decisions. Thus, the accuracy of this forecasting tool boosts the hotel's revenues and profit margin.

Forecasting in the lodging industry has been relatively important based on the nature of industry and operational characteristics and difficulties. This importance is not only related on wide demand fluctuations, but also the efforts to increase occupancy rates, ADR and RevPar. The forecast is the most important driver of any revenue-management optimization approach. Hotels should forecast at a detailed level if the true benefits available from revenue optimization are to be achieved.

5.3.9 Sample Forecasting Forms

The front office may prepare several different forecasts forms, as per their requirements. Occupancy forecasts are typically developed on a monthly basis and reviewed by food and beverage and rooms division management to forecast revenues, project expenses, and develop labor schedules. A ten-day forecast, for example, may be used to update labor scheduling and cost projections and may later be supplemented by a more current three-day forecast. Together, these forecasts help many hotel departments maintain appropriate staff levels for expected business volumes and thereby help contain costs.

Ten-Day Forecast: In most of the properties, the ten-day forecast is prepared jointly by the front office manager and the reservations manager with the support of their forecast committee. Many properties develop their ten-day forecast from their yearly forecast. A ten-day forecast usually consists of:

- Daily forecasted occupancy figures, including room arrivals, room departures, rooms sold, and number of guests.

- The number of group commitments, with a listing of each group's name, arrival and departure dates, number of rooms reserved, number of guests, and perhaps quoted room rates

- A comparison of the previous period's forecasted and actual room counts and occupancy percentages

A special ten-day forecast can also be prepared for food and beverage, banquet, and catering operations. This forecast generally includes the expected number of guests, which is often referred to as the house count. Sometimes the house count is divided

into group and non-group categories so that the hotel's dining room managers can better understand the nature of their business and their staffing needs.

To help the other departments of the hotel to plan their staffing and payroll levels for the upcoming period, the ten-day forecast should be prepared and distributed to all department offices by mid-week for the coming period. This forecast can be especially helpful to the housekeeping department who has to keep the staff ready for the future requirements. A ten-day forecast form, as shown, is typically developed from data collected through several front office sources.

Firstly, the current number of occupied rooms is reviewed. The estimated numbers of overstays and expected departures are noted. Next, relevant reservation information is evaluated for each room (and guest) by date of arrival, length of stay, and date of departure. These counts are then reconciled with reservation control data. Then, the actual counts are adjusted to reflect the projected percentage of no-shows, anticipated under stays, and expected walk-ins. These projections are based on the hotel's recent history, the seasonality of its business, and the known history of specific groups scheduled to arrive. Finally, conventions and other groups are listed on the forecast to alert various department managers related to the possible periods of heavy, or light, check-ins and check-outs. The number of rooms assigned each day to each group may also be noted on the sheet.

Most computer systems software‘s are there to provide a summary of recorded data in a report format for the use of front office manager but these are unable to forecast business. Programming to analyze historical trends and market conditions has been attempted in the past but with little success. Therefore while the computer system can assist in forecasting, it is the knowledge, and skills of the front office manager that determines how accurate the forecast is.

Ten Day Occupancy Forecast

Location : ……..…..Week ending :…….……

Date prepared: ……..….. Prepared by : ……

To be submittedto all department heads atleastone week before the first daylistedon forecast.

Date and Day	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Estimated Departures										
Reservation Arrival groups										
Reservation Arrivals Individual										
Future Resrvations										
Expected Walks In										
Total Arrivals										
Stayovers										
Total Forecasted Rooms										
Occcupancy Multipliers										
Forcasted Number Of Guest										
Actual Rooms Occupied										
Forecasted Varience										
Explantion(Tobe Completed By Front Office Supervisor And Submitted Togeneral Manger)										
Approved: …….. Date:…… General Manager Signature										

Ten Day Forecast

Three-Day Forecast: A three-day forecast is an updated report that reflects a more current estimate of room availability. It gives details of any significant changes from the ten-day forecast. The three-day forecast is prepared to help management in proper planning and fine-tuning of labor schedules and adjusting room availability information.

Exhibit shows a sample three-day forecast form. In some hotels, a brief daily revenue meeting is held to focus on occupancy and rate changes for the next few days. The results of this meeting are often included in the three-day forecast.

Three Day Forecast

Date Of Forecast : .....
Forecast Completed By :.....
Total Rooms In Hotel : .....

	Tonight	Tomorrow	Third Night
Day			
Date			
Previous Night Occupied Room1			
- Expectd Departures			
- Early Departures			
+ Unexpected Stayovers			
Rooms Available For Sale			
+ Expected Arrivals			
+ Walk Ins And Same Day Reservations			
- No Shows			
Oocupied Rooms			
Occupancy %			
Expected House Count 3			

1. previous night occupied room is determined from either b the actual number ofroom occupied last night or the forecasted number of rooms from the previous night.

2. unoccupied rooms equals the total number of rooms in the hotel and less then the number of rooms occupied.

3. Expected house count equals the forecasted occupied rooms times the multiple occupancy percentage for the day.

Three Day Forecast

Room Count Considerations: Control books, charts, software applications, projections, ratios, and formulas are essential for short- and long-range room count planning. Every day, the front office performs several physical counts of rooms occupied, vacant, reserved, and due to check out, to complete the occupancy statistics for that day. A computerized system can reduce the need for most final counts, as these systems can be programmed to continually update room availability information. It is important for front desk to know *exactly* how many rooms are available, especially if the hotel wants to operate at nearly 100 percent occupancy. Once procedures for gathering room count information are established, planning procedures can be extended to longer periods of time to form a more reliable basis for revenue, expense, and labor forecasting. The Checklist in Exhibit may be applicable to non-automated and semi-automated operations alike.

Check Your Progress-I

Q1. What is Forecasting?

_____
_____
_____
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Q 2. Write short note on types of forecasting.

_____
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5.4 YIELD MANAGEMENT

Yield Management is becoming part of the standard operating procedure(SOP) for many hotels with property-Management systems (PMS) being used in hotel industry. Appropriately designed to meet the hotels need, yield management systems generally tries to increase revenue and do much of the guesswork out of rooms-management decisions.

5.4.1 Concept of Yield Management

The airline industry is considered as the birthplace of yield management. After deregulation in the late1970s, airline competition increased, and the airlines tried to operate their planes as efficiently as possible. As they knew their product is perishable in nature eg airplane seat if not sold on a particular day cannot be stored for future use ie revenue lost from that seat is lost forever so to avoid losses and to maximize revenue- Yield management was one of the methods developed as a way of increasing competitive advantage and increasing revenue. In airlines, yield management is concerned with selling the right seat to the right customer at the right price so as to maximize yield.

The airline and hotel industries have several characteristics in common that make them ideal candidates for yield-management systems, the most important one is that both their product or services are perishable ie Each has a fixed number of products (hotel rooms and airline seats) that, if not sold on a certain day or flight, cannot be resold eg a guest room if not sold on particular day cannot be stored for future use-revenue lost for the day is lost forever. Besides that Both have relatively fixed capacities. Once an airplane has been purchased or a hotel has been built, it is rather

difficult and expensive to increase capacity. The idea, then, is to use the available capacity in the best (most profitable) way possible. Moreover Airlines and hotels sell to market segments that have distinct needs in product and service level. Each has demand periods (holidays, weekdays, and weekends in hotels; holidays, weekdays, and time of day for airlines) that place the provider in a favorable position. Airlines and hotels have various rates from which guests can choose. Reservations allow managers to use yield management. By using computers to track a database of products (hotel rooms and airline seats) and to process reservations, managers have the ability to look at a sales horizon of 45 to 90 days and to set price and reservation policies that will allow a prediction of profitability.

Thereby from above discussion it is clear that when any organisation or industry is operating with a relatively fixed capacity, when demand can be segmented into clearly identified partitions, when inventory is perishable, when the product is sold well in advance, when demand fluctuates substantially, and when marginal sales costs are low but marginal production costs are high- Yield-management techniques are appropriate to use to get maximum revenue.

5.4.2 What is Yield Management?

Yield management can be defined as ―selling a product or service to the right customer, at the right time, and at the right price‖. Or can be defined as ―It is a technique based on supply and demand used, to maximize revenues by lowering prices to increase sales during periods of low demand and raising prices during periods of high demand‖. It is also known as revenue management or yield management. As the history of yield management provides the framework for developing background of revenue management, the key to successful revenue management is to sell the right product (guestrooms, banquets, ancillary services) to the right customer (business, leisure, convention, government or any other guest) on the right day (weekday, weekend) for the right price (rack rate, corporate rate, or any other discounted rate). Yield management is the source for the concepts that underlie revenue management.

Basically, yield management is the process of allocating the right type of capacity to the right kind of customer at the right price so as to maximize revenue or yield. In the case of hotels, yield management is concerned with the number of rooms that should be sold at various rate levels. The manager would prefer to sell all rooms at the highest rate possible, but since this rarely is possible, following this policy may lead to empty rooms and lost revenue. Conversely, if a hotel fills its rooms with low-price customers, the revenue that could have been obtained from higher rates will be lost. The objective of yield management, then, is to define what should be done, so as to get maximum revenue in all possible situations. How many rooms should be allocated to and protected for each market segment over time?

Yield Management also is not only a Technique used to Maximize Room Revenues but also act as an evaluative Tool that allows the Front Office Manager to use Potential Revenue as the Standard against which Actual Revenue can be Compared.

$$Yield = \frac{Actual\ Room\ Revenue}{Potential\ Room\ Revenue}$$

5.4.3 Applicability to Room Division

As already mentioned that Hotel and hospitality industry faces the common problem that they produce a fixed inventory of perishable products which cannot be stored if unsold by a specific time. The commodity(room) that the hotel sells is perishable in nature , if a room goes unsold on a given day there is no way to recover the time lost and therefore the revenue lost and is, lost forever for that time, therefore these products are typically sold for varying prices that depends on the time of the transaction and the proposal date of delivery. As yield management strategies can be applied to virtually any type of business that: have a fixed number of products to sell, examples include hotel rooms etc and from the day the hotel industry‘s has shifted their focus from high volume booking to high profit booking, yield management has gain lot of importance in the hotel industry, as they understood that mere volume sale do not generate the desired revenue, and, yield management is composed of a set of demand forecasting techniques used to determine whether room rates should be raised or lowered, and whether a reservation should be accepted or rejected in order to maximize revenue

Thereby as per the definition of yield management, Front office managers have successfully applied such demand – forecasting strategies to room reservation systems, management information system, room and package pricing, rooms and revenue management, seasonal rate determination, pre-theater dinner specials, and special, group, tour operator, and travel agent rates Besides that one of the major differences in how yield management is used in airlines and hotels is that at the hotel, the guest may also spend money for products and services besides the room itself. While in the airline passenger usually does not have an opportunity to spend large amounts of money during a flight. Because of this difference, hoteliers must consider the financial potential of one prospective guest over another in determining reservation policies.

5.4.4 Importance of Yield Management

Different benefits of yield management are:

1. It helps in improving forecasting.
2. Improved seasonal pricing and inventory decisions: It helps in deciding the seasonal and off seasonal pricing for rooms and other products also helps in making important inventory decision.
3. It helps in the identification of new market segments
4. Identification of market segment demands
5. Increased coordination between the front office and sales divisions
6. Determination of discounting activity: It helps in deciding the amount of discount to be offered to the guest depending upon the dates and periods.
7. It helps in the development of short-term and long-term business plans
8. Establishment of a value based rate structure –It helps in defining rate structures, based on perceived values.
9. It helps in Increasing business and profit margin of the organization
10. It helps in savings labor costs and other operating expenses
11. Planned responses to guest inquiries or requests regarding reservations

5.4.5 Tools of Yield Management

In order to maximize Revenue, the Front Office Manager needs to forecast Information
In three ways:

- Capacity Management
- Discount Allocation
- Duration Control

Capacity Management: Capacity Management which is also called as selective overbooking involves a number of methods of controlling and limiting room supply. For example, hotels in general will accept a statistically supported number of reservations in excess of actual room availability in an attempt to avoid the losses generated through the situation of early check-outs, cancellations, and no-shows. Capacity management balances the risk of overselling guestrooms against the potential loss of revenue arising from spoilage because rooms going unoccupied after reservations were closed out.

Other forms of capacity management include determining how many walk-ins to accept on the day of arrival based on expected cancellations and no-shows. Capacity management usually varies with room type. That is, it might be economically advantageous to overbook more in lower-priced rooms, because upgrading to higher-priced rooms is an acceptable solution to an oversell problem. The amount of such overbooking depends, on course, on the demand for the higher-priced rooms. In sophisticated computerized yield management systems, capacity management may also be influenced by the availability of rooms at neighboring hotels or competing properties.

Discount Allocation: Discounting involves restricting the time period and product mix (rooms available at reduced prices (prices below rack rate). For each discounted room type, reservations are requested at various available rates, each set below rack rate. The theory is that the sale of a perishable item (the guestroom) at a reduced price is often better than no sale at all. The primary objective of discount allocation is to protect enough remaining rooms at a higher rate to satisfy the projected demand for rooms at that rate; while at the same time filling rooms that would otherwise have remained unsold. This process is repeated for each rate level from rack rate on down. Implementing such a scheme requires a reliable mechanism for demand forecasting.
A second objective of limiting discounts by room type is to encourage upselling. This technique requires a sound estimate of price elasticity and / or the probability of upgrading. (Elasticity refers to the relationship between price and demand.) If a small increase in price causes drop in demand the market is said to be elastic while, if small increase in price causes no effect on demand, the market is said to be inelastic produces little or no effect on demand.

Duration Control: Duration control places time constraints on accepting reservations in order to protect sufficient space for multi-day requests (representing higher levels of revenue). This means that, under yield management, a reservation for a one night stay may be rejected, even though space is available.

5.4.6 Measuring Yield

Yield management is designed to measure revenue generated by the hotel. For the calculation of yield management is yield statistic, which is the ratio of actual revenue

to potential revenue. Actual revenue is the revenue generated by the number of rooms sold. Potential revenue is the amount of money that would be received if all rooms were sold at full rack rates.

$$Yield = \frac{Actual\ Revenue}{Potential\ Revenue}$$

The mathematics of yield management is relatively simple, although several formulas are involved. These are:

Formula 1: Potential Average Single Rate

It is calculated by multiplying the number of rooms in each type by its single room rack rate and dividing the sum total by the number of potential single rooms in the hotel.

$$Potential\ Average\ Single\ Rate = \frac{Single\ Room\ Revenue\ at\ rack\ rate}{umber\ of\ Rooms\ sold\ at\ singles}$$

Formula 2: Potential Average Double Rate

It is calculated by multiplying the number of rooms in each type by its respective double-room rack rate and dividing the sum total by the number of potential double rooms in the hotel.

$$Potential\ Average\ Double\ Rate = \frac{Double\ Room\ Revenue\ at\ rack\ rate}{umber\ of\ Rooms\ sold\ at\ singles}$$

Formula 3: Multiple Occupancy Percentage

An important element in determining a hotel‘s yield statistic is the proportion of the hotel‘s room that are occupied by more than one person, that is, the multiple occupancy percentage. This information is important because it indicate sales mix and helps balance rates with future occupancy demand

Multiple occupancy = Number of rooms Occupied by More than One Guest
Number of Rooms Occupied

Formula 4: Rate Spread

The determination of a room rate spread among various room types can be essential to the use of yield decisions in targeting a hotel‘s specific market. The mathematical difference between the hotel‘s potential average single rate and potential‘s average double rate is known as rate spread

Rate Spread = Potential Average Double Rate – Potential Average Single Rate

Formula 5: Potential Average Rate

The one very important element in revenue management formulation is the potential average rate. A hotel‘s potential average rate is a collective statistic that effectively combines the potential average rates, multiple occupancy percentage, and rate spread. The potential average rate is determined in two steps. The first step involves multiplying the rate spread by the hotel‘s multiple occupancy percentage. The result is added to the hotel‘s potential average single rate to produce a potential average rate based on demand (sales mix) and room rate information.

Potential Average Rate = Multiple Occupancy% X Rate Spread plus Potential Average Single Rate

Formula 6: Room Rate Achievement Factor

The percentage of the rack rate that the hotel actually receives is contained in the hotel's achievement factor (AF), also called the rate potential percentage. The achievement factor is found by dividing the actual rate the hotel is currently collecting by the potential average rate. The actual average rate is equals to total room revenue divided by either rooms sold or rooms occupied.

$$Achievement\ Factor = \frac{Actual\ Average\ Rate}{Potential\ Average\ Rate}$$

Formula 7: Yield Statistic

An important element in yield management is the yield statistic. The yield statistic calculation incorporates several of the previous formulas into a critical index. There are various equivalent ways to express the yield equation. There are various ways to calculate yield statistical of which are equivalent.

$$Yield = \frac{Actual\ Revenue}{Potential\ Revenue}$$

$$\text{Yield} = \frac{\text{Room Nights Soldy}}{\text{Room Nights Availabledx}} \times \frac{\text{Actual Average Room Rate}}{\text{Potential Average Rate}}$$

Yield = Occupancy Percentage x Achievement Factor

Instead of computing yield as a percentage, some lodging operations prefer an alternate statistic which focuses on revenue per available room (REVPAR or REVPAR). The Rev PAR can be calculated using either of the following equations:

$$RevPAR = \frac{Actual\ Room\ Revenue}{Available\ Rooms}$$

Rev PAR = Occupancy % x ADR

Formula 8: Identical Yields

It involves calculation of different combinations of occupancy and actual average room rate which may result in identical room revenue and yield statistic. It other words it means equivalent gross revenue.

$$Identical\ Yields = \frac{Current\ rate}{Proposed\ rate} \times Occupancy\ \%$$

Formula 9: Equivalent Occupancy

A more effective way of evaluating whether a change in room rates is justifiable or not involves determining an equivalent occupancy. The equivalent occupancy formula can be used when management wants to know; what other combinations of room rate and occupancy percentage provide equivalent net revenue. The marginal cost of providing a room is the cost the hotel incurs by selling that room (for example, cleaning and supplies); this cost would not be incurred if the room were not sold.

Equivalent Occupancy = Current Occupancy % x Rack rate – Marginal Cost / Rack Rate x (1 – Discount %) – Marginal Cost

Equivalent Occupancy = Current Occupancy % x Current Contribution Margin/ New Contribution Margin

Formula10: Required Non-Room Revenue for Guest

Non room revenue means revenue generated from centers others than room such as food and beverage etc. If manager decides that in order to increase room occupancy percentage offers discount and reduces room rates then this would render an off selling changes in non room revenues and involves determining or estimating a number of elements:

- The net loss in room revenue due to room rate discounting
- The amount of non-room revenue needed to compensate this loss.
- The average amount each guest spends in non-room revenue centers.
- The increase in occupancy likely to result from rate discounting

The breakeven calculation is based on the weighted average contribution margin ratio (CMRw) for all non-room revenue centers. While a detailed discussion of this topic is beyond the scope of this text, a simple formula for determining the CMRw for all non—room revenue centers is as follows:

$$\textbf{Contribution Margin Ratio} = \frac{\textbf{Total non room revenue} - \textbf{Total non room revenue centre variable cost}}{\textbf{Total Non Room Revenue}}$$

5.4.7 Elements of Yield Management

The following elements must be included in the development of a successful revenue or hotel yield management strategy:

- Group room sales
- Transient or FIT room sales
- Food and Beverage activity
- Local and area-wide activities
- Special events

Group Room Sales and its effect on Hotel Yield: A group sale provides the bulk booking and thereby forms the majority of the room revenue and is very important for hotel yield. It is common for the hotels to receive group reservations for group sales from three months to two years in advance of arrival. Therefore understanding group booking trends and requirements is very essential for the success of revenue management. To understand the impact of group sales on overall room revenue, the hotel should collect as much group profile information as possible, including:

Group booking data – It is a common practice that Groups tend to block 5-10% percent more rooms than they actually require. Thus FOM analyze and checks that If a group has a previous business profile with the hotel than on the basis of their past records, he can often adjust the block on the basis of group‘s booking history. The hotel‘s deletion of unnecessary group rooms from a group block is called the _wash factor‘. However management must be very much careful in estimating how many rooms to be _washed‘ or deleted from the block as if a group block is reduced by too many rooms, the hotel may find itself overbooked and unable to give rooms to all the members of the group and it will effect hotel yield badly.

Group booking pace – The rate at which group business is being booked is called group booking pace. The rate at which initial agreement between the group organizers and hotel takes place, over a period of time. **Anticipated**

group business – Hotels generally watches out for repetitive group patterns and act accordingly in order to forecast the pressure on the market, and thereby adjusting their selling strategies many national, regional and state associations as well as some corporate, have policies regarding the locations of annual meeting.

Group booking lead time – A measurement of how far in advance group bookings are made ie lead time is the gap between the date of booking and expected date of arrival. The hotel should fix the lead time for group booking the lead time together with the pace of booking is important in deciding how much additional group business should be accepted. If the current booking pace is lower than expected a lower rate to stimulate the business should be offered to get increased occupancy and if demand is strong an group booking pace is ahead of the trends no discounts should be offered.

Displacement of transient business –The process of Displacement means when the hotel decides to accept the group business even if they have to turn away the transient guest, although the transient guest are ready to pay higher room rates is the acceptance of group bookings instead of transient guests. Since transient guests or FITs pay higher room rates than group business, the reservations team should consult its forecast staff whether or not to accept group business for better hotel yield. As well as there is risk of bad reputation, so the Front Office Management should monitor and ensure that by transient displacement more revenue generation and higher occupancy should be achieved by the hotel, and to avoid the situation that transient guest who will not return back to the hotel because of their initial treatment, the hotel must take care of and by accommodating them in some other hotel of the same standards and should be in constant touch with the guests as to give them the feeling that hotel really cares for them.

Transient or FIT room sales and its effect on yield: Transient rooms are the rooms sold to free individual travelers (FIT) or non group travelers. Transient business is usually booked near to their date of arrival than group business who books their rooms one to three months in advance; transient may book their room only one to three weeks before arrival. Thus in order to maximize room revenues, front office managers may:

- Monitor and keep a track of the booking pace and lead time for highest occupancy rate.
- Classify rooms on the basis of their location, desirability or size, and charge more for better rooms.
- Hotels may offer deluxe rooms at standard rates to attract guests especially when demand is low to scale hotel yield.
- Discounts reduce the amount of business lost because of rate resistance and allow the hotels to sell rooms that would otherwise remain vacant. Discounts can be offered to corporate guests, government travelers, senior citizens, military and airline personnel etc.
- Controlling discounts also is very important for generating the highest revenue and hotel yield.

Food and Beverage activity and Hotel Yield: Food and beverage activities in particular catering for functions and receptions etc generate revenue for hotel independently they can have an effect on room revenue. For example, if a banquet

with no guestroom requirements is occupying the hotel's banquet hall, while a group needing 50 guestrooms and a banquet hall may have to be turned away. Therefore a group needing both catering and guestrooms is more profitable. Thus the hotel staff should be encouraged to book such groups who need both accommodation as well as fooding and banquet hall and other function facilities etc from the hotel only (such as marriage parties or corporate having residential conference) so as to earn revenue from both rooms and food and beverage also. Special packages can be made and offered to the guest for this a effective communication and coordination between departments is necessary to maximize revenue from all revenue centers in the hotel.

Local and Area-Wide activities and Hotel Yield: Local and area wide activities like conventions, meetings etc, have a great effect on the revenue management strategies of the hotel. The front office manager and sales or marketing division should be aware of such activities taking place in the destination and the demand for guestrooms created by them in the area. The room rates should be offered according to the demand to take full advantage of the opportunity. Even when a Hotel is not in the immediate vicinity of a Convention, Transient Guests and Smaller Groups displaced by the Convention as one individual hotel may not be able to accommodate all the guest thereby displacing them, the FOM should be ready to cash such situations by inviting them in their hotel may be referred to the Hotel (as an Overflow Facility) and this will have a tremendous impact on Hotel's Revenue

Special Events and Hotel Yield: Special events such as concerts, festivals and sports events held in or near the hotel are also very important for the hotels yield. The front office manager should be able to take advantage of these events by controlling discount ie hotels might decide to benefit from high demand by restricting room rate discounts or requiring a minimum length of stay.

5.4.8 Yield Management Strategies

A hotel needs to determine revenue management strategies for both high and low demand periods. Transient and group business market segments may each require a unique and specific strategy so as to maximize revenue:

Potential High Demand Techniques: During high demand periods the normal techniques is to increase room revenue by maximizing average room rate. Besides that there are some other tactics that can be used to maximize room revenue:

- Try to determine the right mix of market segments in order to sell out the highest possible room rates. This strategy is highly dependent upon accurate sales mix forecasting.
- Monitor New Business Bookings and use these changed Conditions to reassign Room
- Inventory. As Occupancy increases, consider closing the lower room rates, management should be prepared to reopen the lower room rates as the demand begin to decrease, management must closely monitor demand and be flexible in adjusting room rates.
- Consider establishing a Minimum Number of Nights per Stay restriction carefully. For example, resort that always fills to capacity over weekend may ask the guest a three day minimum stay in order to better control occupancy.
- Close or restrict discounts – Analyze the discounts and restrict them as necessary to maximize the average rate. You may offer discounts to

those guest who books for longer stays, or restrict bookings to shorter stays.

- Reduce group room allocations is another great tactics– Communicate and coordinate with group leaders on a regular basis. Make sure the group actually needs the number of rooms specified in its contract. If not, make early adjustments.
- Reduce or eliminate 6 P.M holds – Reduce or eliminate the number of unpaid rooms that are being held until 6 p.m. When demand is high, you need rooms available to fill.
- Tighten guarantee and cancellation policies tactics– Tightening guarantee and cancellation policies helps to ensure payment for room nights. Charge credit cards for the first night's stay on the day the reservation is made.
- Tactics on raise rates to be consistent with the competitors – Charge rates consistent with the competition, but limit rate increases to those rates published in the central reservations systems and listed in brochures for the period.
- Consider a rate raise for packages – If you are already offering a package discount, consider raising the rate for that package.
- Apply full prices to suites and executive rooms – In a high-demand situation charge full price for suites and executive rooms.
- Reserve close to arrival dates – By allowing the reservations to be taken for a certain date as long as the guest arrives before that date, a property is able to control the volume of check-ins.
- Evaluate the benefits of sell-through – With a sell through, the required stay can begin before the date the strategy is applied. This is often used when one day has a peak in occupancy and management does not want the peak to adversely affect reservations on either side of the peak day.
- Apply deposits and guarantees to the last night of stay – For longer lengths of stay, make sure the deposits and guarantees apply to the last night of the stay, minimizing early departures.

Besides the above tactics, a number of group business tactics may be appropriate during high demand periods, while deciding between two groups or more, one should select the group that produces highest total revenue. For this FOM or management must rely on their previous experience with the groups to develop the effective management policies. Keeping the focus on the total revenue it is good to sell blocks of guest rooms to groups because they not only give money through rooms but also provide revenue through the purchase of meeting place, food and beverage services and other hospitality products from the hotel. This tactic usually requires restricting access of local patrons to functions meeting and public spaces if these spaces are booked by local patrons potentially more profitable for groups needing such space may be forced to go elsewhere. Another tactics for handling group business during high demand periods is to attempt to move price sensitive groups to low demand days. In other words if the hotel forecast is high demand for a time when a price sensitive group has already booked space, management may try to reschedule the group's business to a period of lower demand. This tactic which is often easier said than done allow the hotel to replace the lower room rate group with a group willing to pay higher rates.

Potential Low Demand Techniques: The strategy for transient and group business during low demand period:

- Carefully design a flexible Rating System that permits Sales team to offer lower Rates under Certain Situations, such rates should be decided during early planning period keeping in mind the time of low demand periods.
- Strive to accurately project expected Market Mix, the precision of this projection will influence the eventual yield statistic.
- Management should closely monitor Group Bookings and Trends in Transient Business and do Not close off lower Rate and Market Segments arbitrarily
- During low occupancy periods, open Lower Rate Categories, solicit Price Sensitive Groups, promote Corporate, Government, and other Special Discounts, and consider develop New Rate Packages and soliciting business from the local community
- Consider maintaining High Room Rates for Walk-in Guests since these guests have not contacted the hotel prior to arrival they typically present an opportunity to increase the average rate through top down up selling technique.
- A Non-Financial Technique that involves upgrading Guests to a higher category of room than they asked for or are entitled to by virtue of their Room Rate. This techniques may lead to increased guest satisfaction and enhanced customer loyalty but the implementation of this strategy is purely a management decision and has some risks also like for eg the guest may expect the same upgrade on future stay which may not be possible in future and front desk staff has to take extra care to explain that this is a special one time upgrade because the hotel appreciates guest business.
- Sell value and benefits tactics– Rather than just quoting rates, make sure guests know you have the right product for them at the best value. Sell the various values and benefits of staying at your property versus others that the guests may be considering.
- Tactics on Offer packages – To increase room nights, one tactic is to combine accommodations with a number of desirable products and services into a single package with one price. Mention any additions, renovations, or new amenities. Non-room revenue can be included, for example – free movies, discounted attraction tickets and shopping coupons.
- Keep discount categories open – Discounts are directed toward particular markets or are instituted during a particular time or season. During low-demand time, it is important to accept discounts to encourage room nights.
- Offer stay-sensitive price incentives – A stay sensitive price incentive provides a discount for guests who stay longer. For example, a guest staying 3 nights might get an additional Rs.2000/- per night discount, while a guest staying one night might not
- Remove stay restrictions – Remove any stay restrictions so guests are not limited as to when they can arrive or depart. Guests who can stay only one night will be encouraged to stay as well as those who are staying for a week. This will help to maximize occupancy.
- Involve your staff – Create an incentive contest to increase occupancy and room nights. Make sure to involve all members of revenue department as well as central reservations staff.
- Establish relationships with competitors – Having a cordial relationship with competitors can help with referrals and can help to carry out cross-marketing efforts.

- Lower rates tactics– There is great value in keeping guests at the property as long as you are at least covering the cost of occupancy. You may want to lower your rates as low as possible. Identify the hurdle rate, which is the lowest rate acceptable at that given moment

Implementing Revenue strategies: Once all the tactics are being analyzed and decided than the FOM must decide what rates will be applicable on any given day, as rack rates are always left open whether demand is high or low than in order to implement these tactics, Management or FOM must establishes the Hurdle Rate or The Lowest Rate for a Given Day, below which it is impossible to sell any Room ie any room that can be sold at the rate above the hurdle rate is acceptable by the management while if the room rates goes below these hurdle rates this should not be the situation. Some automated revenue system do not even display the room rates below the hurdle rate this preventing their use, hurdle rates can fluctuate from day to day, season to season depending upon the hotel's desired yield and market conditions, the hurdle rates usually reflects the FOM pricing strategy to maximize yield. Sometimes incentives are being offered to front desk and reservation staff for selling the rooms above the hurdle rate. Incentives may also be provided for longer guest stays, for eg a guest staying for three nights may qualify for lower rates than a guest staying for one night, this is called as stay sensitive hurdle rate. Reservation staff should receive incentive for booking a guest with there night stay even if it is at lower rate, because the total revenue generated from reservation will be greater than the revenue of one or two night stay.

5.4.9 Yield Management Team

The yield is primarily concerned with accommodation in the hotel industry, so everyone who is concerned with it either directly or indirectly with it forms the team of yield management. Basically three persons-front office/room division manager, reservation manager and sales manager comprise the team of the yield management. The front office manager has the overall control of the department with the targets of maximizing occupancy and revenue. Reservation manager has complete information of booking patterns, past histories and trends pace and bad times etc of hotels and its bookings, and sales department who bring business and whose primary function is to get guests to the hotel and hence working with the forecast team ensures that his department's team is fully aware of highs and lows of the hotel business.

The role of the team is primarily to forecast the demand of rooms and to assess whether to take transient or FIT in preference to group etc ie allocating the right number of rooms to various market segments on the basis of discussing reasoning and possible revenue generation calculation. Factors such as historical data, expected walk-ins, corporate rate business volume or corporate guest are also considered. The team working on yield management will decide on the levels of rates to open or close. Feedback sessions are another important function of yield management team. It is basically done to assess whether the decision taken with respect to revenue and occupancy management and strategies used were effective and accurate or not. Feedback also tells about the efficiency and performance of staff and hence is a guide for future improvement. Yield management team should collect as much information as possible and as fast as possible and should react to it immediately so as not to loose any opportunity as it comes to the hotel. There might be situation coming where the hotel rooms may be full yet the revenue yield may not be maximum possible if the information collected is not complete or action is not taken immediately.

5.4.10 Yield Management Software

Although the individual task of revenue management can be performed manually, but for processing of large databases it is impossible without appropriate yield management software that too at much faster pace and with great accuracy thus hotels that uses these software gain strategic advantage over those that rely on intuitive revenue management decisions only. Yield management software helps revenue of front office managers by giving suggestions on price amendments, inventory control and channel management, and can integrate room demand and room price statistics and can stimulate high revenue producing product. A yield management software is designed to analyze raw data collected from in house property, management system, creates booking patterns, categories all information and prepares forecasting reports. The software should be able to:

- Establish and monitors the hotel rate structure
- Continual monitor‘s reservation activity and set inventory controls as needed
- Identify the high and low demand periods of the hotel and prepares hotel act accordingly
- Helps in rate negotiation with travel wholesalers and group booking
- Monitor and restrict the number of reservation that can be taken for any particular room night or room rate/room type.
- Matches the right room product and rate with guest need‘s and sensitivities.
- Makes the organisation ready for the changes in the competitive world
- Screening the available data and makes necessary projections for decision making of what action should be taken in terms of rate, occupancy and revenue etc.

Thus on one hand, the software analyses enormous data bases and provides useful forecasts based on the optimization models embedded in it and on the other hand, helps the revenue managers to plan for future and helps in decision making ie it is able to keep track of a wide range of forecasting data, and responds more flexibly to changes in booking levels: swiftly recognizing where demand is getting ahead of, or falling behind, forecast, at any given time. The system can then help reservations clerks in taking the right decision about what bookings to take and at what price. The system accesses the database of all historical guest information, fluctuations in demand, room rates and sources of business. In addition, data can be input on local events and other factors which might attract higher demand in a certain period. Thereby computer based yield management system has become a popular hotel industry software application.

Check Your Progress-II

Q1. What is Yield Management?

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Q 2. Write note on Calculating Yield.

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5.5 EVALUATION OF FRONT OFFICE OPERATIONS

Evaluating and measuring the performance of a hotel is one of the important management functions as its investors, owners and manager‘s wants to assess the profitability, revenue generation from the hotel ie to know whether the front office is able to attain the goals which were planned earlier and also to decide for future.

Therefore it is essential to have thorough evaluation of the results of front office operations which is done by front office managers; they evaluate the results of the departmental activities on a daily, monthly, quarterly and yearly basis. Some major **tools or factors** which front office managers can use for evaluating front office operations and to evaluate the success of front office operations are:

- The Daily Operations Report
- Occupancy Ratios
- Rooms Revenue Analysis
- The Hotel Income Statement
- The Rooms Schedule
- Rooms Division Budget Reports
- Operating Ratios
- Ratio Standard

5.5.1 The Daily Operations Report

The daily operations report also known as the manager‘s report, the daily report or the daily revenue report; have the summary of the hotel‘s financial activities during a 24-hour period. The report has the summary of cash reconciliation, bank accounts, revenue and accounts receivable. It also serves as a posting reference for various accounting journals and provides data that act as an input to link front and back office automated functions. The copies of the report are generally distributed to all department and division managers.

A room statistics and occupancy ratio from all the sections of the hotel becomes the part of the daily operations report and with the comments and observations from the accounting staff, statistics shown on the daily operations report makes it more meaningful for the manger‘s in identifying the problem and taking the right decision. For example, if statistics shows about the number of guests using the hotel‘s Gym services sale is down while occupancy is up. The front office manager may assume that the front office staff is not properly promoting available guest gym services.

5.5.2 Occupancy Ratios

Occupancy ratios help in identifying that how successful the front office staff was in selling the hotel‘s primary product – guestrooms. The following room statistics must be collected to calculate basic occupancy ratios:

- Number of rooms available for sale
- Number of rooms sold
- Number of guests
- Number of guests per room
- Net rooms revenue

Generally, these data‘s are also available on the daily operations report. Occupancy ratios that can be calculated from these data include occupancy percentage, multiple (or double) occupancy ratio, average daily rate, revenue per available room (Rev PAR), revenue per available customer (Rev PAC), and average rate per guest. Occupancy percentage and average daily rate may also be available on a property‘s daily operations report. These ratios typically are calculated on a daily, weekly, monthly, and yearly basis.

night auditor collects occupied rooms data and calculates occupancy ratios for the front office manager, and later on with its help, FOM analyzes the given information to identify trends, patterns, or problems. When analyzing the information, the front office manager must take into consideration how different conditions can affect occupancy.

―For example, as multiple occupancy increases, the average daily room rate may also increase. This is because, when a room is sold to more than one person, the room rate for two people in a room is usually not twice the rate for one person, the average room rate per guest decreases.

5.5.3 Occupancy Percentage

This is the most commonly used operating ratio in the front office, Occupancy percentage indicates the number of rooms either sold or occupied to the number of rooms available during a specific period of time. Where some hotels use the number of rooms sold to calculate this percentage, while other hotels use the number of rooms occupied to calculate the statistic thereby including complimentary rooms in the calculation which can change certain operating statistics, such as average room rate etc. Though using rooms sold, or, rooms occupied both is valid, depending upon the needs and history of the property. (Here in this unit or discussion we will use rooms occupied to illustrate the occupancy percentage calculation).

Sometimes even out-of-order rooms are also included in the number of rooms available as in some properties FOM evaluates management performance partly on the basis of occupancy percentage, including out-of-order rooms in the number of rooms available, as it provides the manager with chance to get those rooms fixed and recycled more quickly. Including all rooms also provides a consistent base on which to measure occupancy. While on other hand, not including out-of-order rooms may allow managers to artificially increase the calculated occupancy percentage simply by mentioning unsold rooms as out-of-order. Some properties do not include out-of-order rooms because these rooms are not available for sale as, occupancy percentage is required to evaluate the performance of front office staff that is having no control over out-of-order rooms, and including those rooms may unfairly penalize the front office

staff. Regardless of the approach chosen, it should be used consistently. The occupancy percentage for the Hotel is calculated as follows:

$$\textbf{Occupancy \%} = \frac{\textbf{Number of room occupied}}{\textbf{Number of rooms available}} \times \textbf{100}$$

5.5.4 Multiple Occupancy Ratio

Multiple Occupancy Ratio: The multiple occupancy ratio which is also sometimes called as double occupancy ratio, may not always be accurate, it is used to forecast food and beverage revenue, indicate clean linen requirements, and analyze average daily room rates. Multiple occupancy can be calculated by determining a multiple occupancy percentage or by determining the average number of guests per room or occupied (also called the occupancy multiplier or the multiple occupancy factor).

$$\textbf{Multiple Occupancy Ratio} = \frac{\textbf{Number of room occupied by more then one guest}}{\textbf{Number of rooms occupied}} \times \textbf{100}$$

The average number of guests per room sold is calculated as follows:

$$\textbf{\textit{Average Guest per Room Sold}} = \frac{\textbf{\textit{Number of Guests}}}{\textbf{\textit{Number of rooms Sold}}}$$

5.5.5 Average Daily Rate

Average Daily rate commonly referred to as ADR is a statistical unit which gives average rental income per occupied room for a given period. It is calculated by dividing Total revenue generated in a specific duration of time by the total number of rooms sold in that duration.

$$\textbf{ADR} = \frac{\textbf{Total revenue generated in a specific period}}{\textbf{Total Number of rooms sold in that period}}$$

5.5.6 Average Room Rate Per Guest

It is also called as ARG and is calculated by dividing the total room revenue by the total number of guest in the hotels including children above 5yrs of age. Resort hotels, in particular, are often interested in knowing the average rate per guest (ARG).

$$\textbf{ARG} = \frac{\textbf{Total revenue generated in a specific period}}{\textbf{Total Number of guest in hotel}}$$

5.5.7 Revenue per available room Rev- Par

Rev- Par is the Revenue per available room. Rev- Par divides the total revenue generation of the hotel by the number of available rooms. It is used to measure and compare the performance of two or more hotels.

$$\textbf{RevPar} = \frac{\textbf{Total Room Revenue}}{\textbf{Number of Available Rooms}}$$

5.5.8 Revenue per Available Customer (Rev-PAC

This is very useful for hotel having high multiple occupancy% since it provides an average spending figure per guest. Usually the higher the multiple occupancy the higher will be the revenue.

$$\text{RevPAC} = \frac{\text{Total Room Revenue}}{\text{Number of Guests}}$$

5.5.9 Rooms Revenue Analysis

Front office staff members are expected to sell rooms at the rack rate unless a guest qualifies for an authorized discounted room rate. A room rate variance report mention those rooms that have been sold at the price other than the rack rates. One way for front office managers to Evaluating Front Office Operations and the sales effectiveness of the front office staff is to generate yield statistic, which is actual rooms revenue as a percentage of potential rooms revenue and the other method is by comparing the hotel‘s actual average rate to an ideal average rate.

$$Yield = \frac{Actual\ Room\ Revenue}{Potential\ Room\ \ Revenue}$$

Ideal Average Rate (IAR): This indicates the point at which rooms are sold at the best rate for the type of guest accommodated by the property.

5.5.10 The Hotel Income Statement

This informs the amount of net income for a given period and is very important financial statement which helps in evaluating Front Office Operations for a given period of time The hotel‘s income statement provides important financial information about the results of hotel operations. This period may be one month or longer but should not exceed more than one business year. The hotel‘s statement of income is also called a consolidated income statement because it presents a complete picture of all the hotel‘s financial operations.

It is an important financial indicator of operational success and profitability. The hotel income statement relies on detailed FO information that is supplied through the room schedule or room division income statement. The amount of income generated by the rooms division is determined by subtracting payroll and related expenses and other expanses from the amount of net revenue produced by the room division over the period covered by income statement, Payroll expenses charged to the room division may include those associated with the front office manager and staff and reservation manager and staff and housekeepers and uniformed service staff as the Revenue generated by the rooms division is usually the largest single amount produced by revenue center with in a hotel

5.5.11 The Rooms Schedule/ Room Division income statement

The hotel‘s income statement shows only summary information of the revenue generated by the hotel as a whole. The separate departmental income statements prepared by each revenue center provide more detail. The room division is the profit centre so the room division budget is concerned with planning to maximize revenue

sand minimize expanses. This statement specifies the desired sales goals that are basis for planning expanses and capital expenditures refurbishing expanses, increasing supplies inventory etc. Departmental income statements are also called as _Schedules' and are referenced on the hotel's statement of income and are prepared by the hotel's account section and not by the front office staff. By carefully analyzing and reviewing the room division income statement the front office manager may be able to develop the action plan to improve the division's financial condition and services etc. for example the income statement may indicate that phone revenue is down due to the high long distance surcharge being charged from the guest thereby the analysis reveals that guest are making fewer calls because the cost per call was increased by the surcharge. Therefore even though the revenue per call may have increased, overall telephone revenues have decreased.

Room Division Budget Reports : It is said that no system of planning can be successful if it is not having an effective and efficient system of control. Budgeting is closely connected with control. The exercise of control in the organization with the help of budget is known as budgetary control. The hotel's accounting division also prepares monthly budget reports that compare actual revenue and expense figures with budgeted amounts. These reports can provide timely information for evaluating front office operations. Front office performances are often judged according to how favorably the rooms division's monthly income and expense figures compare with budgeted amounts. A typical budget report format should include both monthly variances and year to date variances for all budget items. The process of budgetary control is:

- Preparation of various budgets
- Continuous comparison of actual performance with budgetary performance.
- Revision of budgets in the light of changed circumstances

A system of budgetary control should not be rigid. There should be enough scope of flexibility to make individual initiative and drive. Budgetary control is an effective tool for making the organization more efficient on all fronts. it is an important tool for keeping control on cost and helping achieving overall objective of the organization.

5.5.12 Operating Ratios

It measures the relationship between the revenues and expenses and units of inputs and outputs, thereby assists managers in evaluating the success of front office operations. Operating ratios are compared against proper standard- budgeted percentage and any significant variances can be identified i.e. it helps to identifies the areas where management must work so as to achieve budgetary goals.

Payroll and related expenses or labour cost tends to be the largest single expenses for the room division as well as for the entire hotel. For control, labor costs must be analyzed on a departmental basis as Room sales fluctuates but payroll and related expenses relatively remains constant Hence any differences between actual and budgeted labor cost percentages must be carefully identified. it is obtained by dividing the payroll and related expenses by the room division's net room revenue yields.

5.5.13 Ratio standards

Operating ratios becomes meaningful when compared against useful criteria such as:

- Planed ratio goals

- Corresponding historical ratios
- Industry averages

Ratios are best compared against planned ratios goals. For eg in order to more effectively control labour costs a front office manager may project a goal for the current month‘s labour cost percentage that is slightly lower than the previous months the expectation of lower labour cost percentage may reflect the front office manager‘s efforts to improve scheduling procedures and other factors related to the cost labour. By comparing the actual labour cost percentage with the planned goal, the manager can measure the success of his efforts to control labour cost. Ratio standards are only indicators and not the solution ,as, When ratios vary significantly form planned goals, previous results, or industrial average‘s, they indicate that their exist any problem and as they do not solve problems or necessarily reveal the source of a problem More analysis and investigations are required to be done to determine appropriate corrective actions.

Check Your Progress-III

Q1. How we can evaluate the performance of hotel?

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Q 2. Write note on Operating Ratio.

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5.6 SUMMARY

Forecasting future demand in the lodging industry is crucial because it leads to an efficient planning for, and decision making to all the departments, and most importantly it is one of the drivers of pricing: inaccurate forecasts or predictions will diminish the hotel's revenues and profit margin. In fact, a 10% improvement in forecasting accuracy translates into a 1.5 to 3% increase in revenue generated from a revenue management system. This will probably impact the net income in a much larger way, due to the small margins existing in the hotel industry. Therefore, in addressing the importance of forecasts, one can state that forecasting is the most important driver of any revenue management optimization approach.

It is important for all those related to the hotel and the managers must continuously evaluate and assess the performance of the hotel with respect to revenue generation. Hotels measures their performance by calculating occupancy ratios, average daily rate, average room rate per guest, rev par etc, this helps them to plan for future.

5.7 GLOSSARY

Average daily rate (ADR): a measure of the hotel staff's ability to sell available room rates.

Complimentary rate (comp): a rate in which there is no charge to the guest

Forecasting: Projecting room sales for a specific period.

Hubbart formula –a scientific method to determine the room rent. It is based on the principle of covering the cost that is incurred in providing the accommodation plus a reasonable return on investment.

Hurdle rate: lowest rate for a given day.

Market based pricing- to make an accommodation product available at a price that a guest is willing to pay

No-show: A guests with confirmed or guaranteed reservations but did not show upon the date of his reservation.

Occupancy percent: the number of rooms sold divided by the number of rooms available multiplied by 100

Overbooking – a situation when a hotel books more rooms than its total inventory of rooms.

Potential revenue: the maximum revenue that can be generated from the operations of any business.

Rack rate – it is the published rate of a particular type of room before any discount.

Revenue Management: a process of planning to achieve maximum room rates and most profitable guests (guests who will spend money at the hotel's food and beverage outlets, gift shops, etc.), that encourages front office managers, general managers, and marketing and sales directors to target sales periods and develop sales programs that will maximize profit for the hotel

Revenue per available room (RevPAR): It is the ratio of room revenues received for a specific day by the number of rooms available in the hotel for that day.

Revenue realized: the actual amount of room revenue earned **Room revenues**: the amount of room sales received

ROI return on investment – it is the amount gained if a sum of money was invested in the open market rather than a commercial/industrial venture.

Room tariff card- these are published list of the different tariffs offered by hotel for the use of travel trade, companies and individual guest.

Rooms forecast: the projection of room sales for a specific period

Seasonal rate- rates fluctuating on the basis of the seasonal demand.
Under stays: guests who arrive on time but decide to leave before their predicted date of departure

Walk-in guests: guests who request a room rental without having made a reservation

Wash Factor- deletion of unnecessary group rooms from a group block.

Yield percentage: the effectiveness of a hotel at selling its rooms at the highest rate available to the most profitable guest

Yield: the ratio of total output generated to actual potential.

Room Inventory - : It is the total number of rooms that could possibly be sold on a given date is called is called room inventory. The inventory does not include rooms that are out of order for maintenance or redecoration or rooms that are currently under construction.

Previous Night Occupancy - : It is the total numbers of rooms that were occupied by the guest on the previous night.

Departures: - A departure are those guest who are scheduled or planned to be check out on the current date.

Reservations - : This report must take into consideration the total numbers of rooms for which reservations have been received for the current date.

Under Stay: - : Those guest who were actually supposed to stay in the hotel but checked out before their scheduled departure date due to any reason is called under stay.

Over Stay: - :Those guest who stays or remains in the hotel beyond the scheduled departure date is called over stay.

Cancellation: - :Those reservations which were made by the guest but are canceled due to some reasons.

No-Shows - : Besides cancellation there is a small percentage of people who make reservations and never check – in. The average number show rate is about 5% of reservations.

Early arrivals: - : There are chances also that a guest will check in prior to the estimated arrival date.

5.8 REFERENCES/BIBLIOGRAPHY

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5.9 SUGGESTED READINGS

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- Hotel and Catering Studies – Ursula Jones
- Hotel Hostel and Hospital Housekeeping – Joan C Branson & Margaret Lennox (ELBS)
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- Housekeeping management – Margaret M. Leappa & Aleta Netschke
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- Commercial Housekeeping & Maintenance – Stanley Thornes

5.10 TERMINAL QUESTIONS

1. Explain the rule of thumb approach with its drawbacks
2. What is occupancy percentage? How can you calculate the occupancy percentage?

3. Define forecasting? What are the major benefits of forecasting?
4. What do you understand by forecasting room revenue and estimating expanses?
5. Explain how tools of yield management helps in improving revenue generation?
6. Mention the different elements of yield management?
7. Throw light on the common approaches for tariff fixation or calculating room rates?
8. Identify types of room rates applicable in the hotel industry
9. What data‘s should be kept in mind while forecasting of room availability? What is the forecasting formula
10. Discuss the criteria for evaluating the performance of the hotel?
11. What is yield management concept? Mentioning the different formula used to measure the yield?
12. Discuss how a yield management strategy is used to meet high and low demand period?