ALPHA COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

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Q-1 EXPLAIN THE REQUIREMENT OF MAINTANANCE IN BUILDING.

- Preventative maintenance keeps up a building's appearance and extends its life.
- It also prevents the loss of original fabric, as less material is lost in regular, minimal and small-scale work than in extensive restoration projects.
- Preventative maintenance makes economic sense as it may reduce or potentially eliminate the need for, and the extent of, major repair projects.
- Repairs can be disruptive and costly in terms of fabric and finances, so extending the period between repair campaigns by carrying out maintenance places less of a burden on community resources.
- A small but regular investment in tasks such as the routine cleaning of gutters and drains can be much cheaper and less inconvenient than having to cope with a serious outbreak of dry rot in timber roof trusses following years of neglect.
- Periodic inspection and maintenance of the roof, walls, gutters, drains, and foundations is an investment in controlling interior conditions as well as in preserving the building itself.
- A regular schedule for maintenance of the exterior and interior of the building should be created and maintained with an ongoing log of building problems and resolutions.

Q-2 EXPLAIN TYPES OF MAINTANANCE.

1. Day to Day Repairs

- Day to day repairs include service repairs which arises from time to time in the services of the buildings such as in plumbing works, water supply, etc. Examples for such repairs are removing chokage of drainage pipes, man holes, restoration of water supply, replacement of blown fuses, repairs to faulty switches, watering of plants, lawn mowing, hedge cutting, sweeping of leaf falls etc. The purpose of this maintenance service is to ensure satisfactory continuous functioning of various services in the buildings.

2. Annual Repairs

- This maintenance service is carried out to maintain the aesthetics of buildings and services as well as to preserve their life, some works like white washing, distempering, painting, cleaning of lines, tanks etc. are carried out periodically. These works are planned on year to year basis.

3. Special Repairs

- Special repairs of building are undertaken to replace the existing parts of buildings and services which get deteriorated on ageing of buildings. It is necessary to prevent the structure & services from deterioration and restore it back to its original conditions to the extent possible.

Q-3 EXPLAIN GENERAL MAINTANANCE.

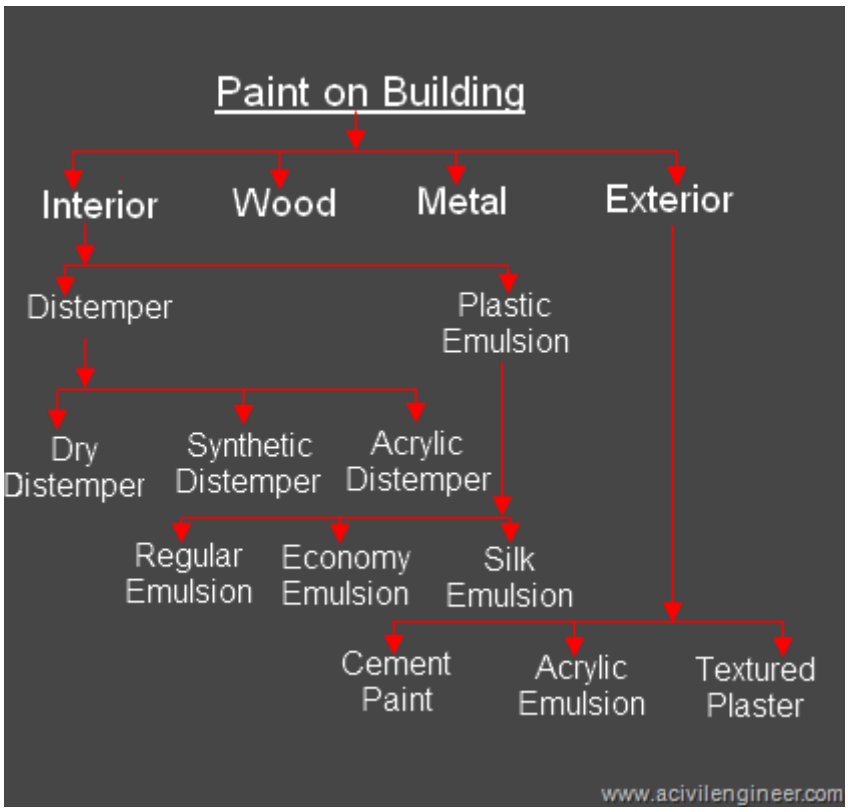
- The general maintenance shop is responsible for maintenance and repair of campus building structures. Broadly speaking, general maintenance is responsible for carpentry, plumbing, cabinet-related projects and sign services, as well as the lock shop. Please see services provided to better understand the work that general maintenance performs.
- The following represents examples of services provided by the general building maintenance area.
- Repair of door systems to include locks, closers, hinges, and stops
- Repair of floor tile
- Replacement of ceiling tiles
- Repair roof leaks
- Repair of classroom furniture
- Installation of chalkboards
- Repair of moldings and cove base
- Repair of broken windows
- Plumbing repair to include leaky faucets, plugged sinks, toilets and drains
- Repair of cabinets
- Installation of room numbers and signs

Q-4 WHAT IS PAINTING?DESCRIBE IT.

- The painting technology is growing more rapidly day-by-day and it has attained a higher position in almost all areas where nothing is said to be complete without

painting as far as material world is concerned.

- Painting of civil engineering structures is required from aesthetic considerations, and as protective coating.
- Suitable type of paints applied to the surfaces can enhance the life as well as appearance of the structure.
- The most important functions of paints are protection and decoration of a substrate.
- The three factors sunlight, moisture and heat affect the durability of paint coatings and the durability of substrates (wood, plastics, etc.). Although, each factor can independently lead to deterioration, the effect of the combination of the three factors is much more severe than each factor separately.
- Each of them can lead to the breakdown of the resin in painted surfaces which binds (holds) the pigment to the substrate surface.
- The more resin available to completely coat a pigment particle, the more forcefully the particle is bound to a surface. It is the fact that premium paints have a high ratio of resin to pigment.
- A low cost paint typically has a high pigment content relative to resin content as pigment is less expensive than resin. Although a high pigment content paint has an excellent “hiding” ability, high pigment content paints with low resin contents are unable to resist exposure to sunlight and moisture.
- Gloss paints have more resin than semi-gloss paints, and semi-gloss paints have more resin than flat paints.
- Gloss paints have the most resistance to ultraviolet radiation and moisture; flat paints have least. Presently, in India, there are so many companies manufacturing various types of paints under different brand names. The paints covered in this handbook are taken as reference to elaborate the various technical details in case of using them in structures other than bridge structures.
- In building, you will find four types of places to paint on. Such as -



1. Interior wall and ceiling

1. To increase the visual appeal and smoothness of wall surface and ceiling interior paint is done. Following types of paints can be used as interior paint -

   Distemper: Distemper is common type paint used in interior wall and ceiling for protecting and decorating brick wall, concrete and plastered surface. Variety of distemper are available in the market. Such as acrylic distemper, synthetic distemper, dry distemper etc. Acrylic distemper is washable and can be applied on plaster, wall and asbestos. Synthetic and dry distemper are not washable.

   Plastic paint: It is also called plastic emulsion paint or interior emulsion paint. It is water base paint. This paint is durable and can be washed. They are available in three categories -

   1) Regular emulsion

   2) Economy emulsion and

   3) Premium emulsion

2. Exterior

- Exterior paint must have weather resisting capability. It can be oil based or water based. But oil based paint is not generally recommended for exterior painting. Following types of exterior paint are available in market -

Cement paint- It is water based paint. It gives nice finish to newly constructed building.

Textured plaster- It is also emulsion based paint. But the surface protection capability of textured plaster is much better than other emulsion paint.

3. Wood

- Traditional paint for wood is varnish. But now a days many people choose modern version of varnish "polyurethane and melamine" for wood finishes. It allows wood grains to see through it unlike varnish.

- Enamel paint is commonly used for metal. This is oil based paint.
  Following types of enamel paints is used on metal surface in building construction
  a) General purpose enamel paint
  b) Synthetic enamel paint
  c) Premium enamel paint
- General purpose enamel paint - This type of enamel paint's protecting capability is lower than other two. But using two coat of this paint can give long protection to metal surface.
- Synthetic enamel paint - This type of paint gives metal surface a good finish with atmospheric protection. Synthetic enamel paint can also be used on wooden surface.

Q-5 EXPLAIN HOUSE ELECTRIC SYSTEM.

- Electricity has become an essential part of contemporary life, energizing lights, appliances, heat, air conditioning, televisions, telephones, computers, and many other modern conveniences.
- Electricity arrives at your house from your local utility company by a power line or underground though a conduit. Most homes have three-wire service—two hot wires and one neutral.
- Throughout the house, one hot wire and one neutral wire power conventional 120-volt lights and appliances; both hot wires and the neutral wire make a 240-volt

circuit for large appliances such as air conditioners and electric furnaces. An electric meter, monitored by your electric utility company, is mounted where the electricity enters your house.

- The main panel is usually right next to or under the meter. This is the central distribution point for the electrical circuits that run to lights, receptacles, and appliances throughout the house. A circuit, by definition, is a circular journey that begins and ends at the same place, and this is essentially how electricity works. Current begins at a power source, powers the appliance or device along the circuit, and then returns to the power source. Any interruption in this path will render the circuit dead.
- A circuit consists of a hot (usually black) wire that goes from the main panel to a series of lights, receptacles, or appliances, and a neutral (usually white) wire that returns to the main panel. In addition to the neutral wire, a grounding wire also returns to the main panel and, from there, to the earth. The purpose of the ground is to divert electricity from any short-circuiting hot wires into the earth, preventing electric shock.
- Subpanels in other locations of the house, connected to the main panel, provide power to areas that have a number of different circuits or large appliances, such as the kitchen and laundry room. They also are equipped with a secondary set of circuit breakers.
- ow-voltage electrical systems are also common in houses for powering doorbells, intercoms, sprinkler timers, outdoor lighting, and some types of low-voltage indoor lighting. Relative to conventional voltage wiring, these systems are much safer for homeowners to work on.