PNS SCHOOL OF ENGINEERING & TECHNOLOGY

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Internal Assessment Examination – 2022 (6th Semester)

Sub-Advance constructions techniques & equipment's (Th-3)

Branch – Civil Engineering

Time: 1.5 Hours

Answer all the questions . (2* 5)

1. (a) what is prefabrication ?

Prefabrication, the assembly of buildings or their components at a location other than the building site. The method controls construction costs by economizing on time, wages, and materials.

Prefabrication is the act of making buildings or building components in another location, presumably one better suited to construction. Once completed, construction companies transport them to the final site, where they complete setup and handoff buildings to their new owners.

(b) What is Acoustic material?

When the sound intensity is more, then it gives the great trouble or nuisance to the particular area like auditorium, cinema hall, studio, recreation centre, entertainment hall, college reading hall. Hence it is very important to make that area or room to be sound proof by using a suitable material called as 'Acoustic material'. It is measured in decibels (db).

(c) What is wall cladding?

Wall cladding is a type of decorative covering intended to make a wall look like it is made of a different sort of material than it actually is. Some of the most common examples are on the outside of buildings, but cladding can also be an artistic element in interior decorating.

The most common types of cladding are Stone Cladding, Brick Cladding, Timber Cladding, Metal Cladding, Concrete Cladding, Glass Cladding.

(d) What is artificial sand?

Artificial sand, also called crushed sand or mechanical sand, refers to rocks, mine tailings or industrial waste granules with a particle size of less than 4.75 mm, which are processed by mechanical crushing and sieving, but does not include soft and weathered granules

(d) What is micro silica ?

Micro silica is an excellent admixture for concrete as it leads to better engineering properties reduces thermal cracking, improves durability and increases strength.

NO-2 LONG QUESTIONS (5X2)

(a)Explain prefabrication techniques?

The Prefabrication is classified as follow

1. Small prefabrication
2. Medium Prefabrication
3. Large Prefabrication
4. Cast in Site Prefabrication

5. Open system of prefabrication

6. Closed system of prefabrication

7. Partial prefabrication

8. Total prefabrication

Small Prefabrication:

The first 3 types are mainly classified according to their degree of precast Elements using in that construction for eg.: brick is a small unit precast and used in building. This is called as small prefabrication. That the degree of precast element is very position

MediumPrefabrication: Suppose the roofing systems and horizontal members are provided with pretested elements those construction are known as medium prefabricated construction here th degree of precast elementsare moderate.

Large Prefabrication:

In large prefabrication most of the members like wall panels, roofing / flooring Systems, beams and columns are prefabricated. Here degree of precast elements is high.

Cast - in - site prefabrication: OFF - site (factory) prefabrication :

One of the main factors which affect the factory prefabrication is transport. The width of mad walls, mode of transport, vehicles are the factors which prefabrication is to be done on site on factory

and more for small elements the conveyance is easier with normal type of lorry and trailers. Thereforewe can adopt factory (or) OFF site prefabrication for this type of construction.

Open system of prefabrication

In the total prefabrication systems, the space framers are casted as a single unit and erected at the site. The wall fitting and other fixing are done on site. This type of construction is knownas open system of prefabrication.

Closed system of prefabrication:

In this system the whole things are casted with fixings and erected on their position. **Partial prefabrication:**

In this method of construction the building element (mostly horizontal) required are precast and then erected. Since the costing of horizontal elements (roof / floor) often take there time due to erection of from work the completion of the building is delayed and hence this method is restored. In most of the building sites this method is popular more. Son in industrial buildings where the elements have longer spans. Use of double tees, channel units, cored stabs, slabs, hyperboloid shalletc., are some of the horizontal elements.

(b) Explain Advantages and dis advantages of prefabrication.

We've listed 10 of the biggest benefits below.

- Materials are extremely durable. ...
- Construction is far faster. ...
- There are fewer ambient risk factors. ...
- Quality can be controlled prior to construction. ...
- There is less risk of on-site accidents. ...
- It simplifies construction processes and timelines. ...
- It benefits the environment.

The disadvantages of prefabrication include:

- Road transport maximum widths.
- The need for police escorts.
- Height restrictions under bridges.
- Daytime traffic restrictions in city centres.
- Maximum load capacities of site craneage and temporary gantries.

(c) Write down the advantages of cast-in-site prefabrication over off-site(factory) prefabrication.

One of the main factor which affect the factory prefabrication is transport. The width of mad walls, mode of transport, vehicles are the factors which prefabrication is to be done on site on factory.Suppose the factory situated at a long distance from the construction site and the vehicle have to cross a congested traffic with heavy weighed elements the cost in side prefabrication is preferred

even thoughthe same condition are the cast in site prefabrication is preferred only when number of houses

and more for small elements the conveyance is easier with normal type of lorry and trailers. Thereforewe can adopt factory (or) OFF site prefabrication for this type of construction.