

(2 MARKS)

UNIT-1 (CONCRETE TECHNOLOGY)

1) Enumerate the various types of methods adopted for compacting concrete

Hand compaction. Compaction by vibration, Compaction by pressure and jolting, compaction by spinning. Various types of vibrators are internal vibrator, Table vibrator, platform vibrator, surface vibrator and vibratory roller

2) List out any four methods of Nondestructive testing of concrete

1) Maturity test 2) Ultrasonic pulse velocity method 3) Surface hardness method 4) Ultra sonic tests for hardened concrete

3) What are the various grades of cement?

Grade 33. Grade 43. Grade 53

4). Name any four types of cement

Ordinary Portland cement, Rapid hardening cement, Sulphate resisting cement, High alumina cement, Quick setting cement

5) What are the four physical properties of cement?

Fineness, setting time, Compressive strength, soundness

6) Mention any four good qualities of cement

The cement should be uniform

When a small quantity of cement is thrown in water it should sink

Should be cool when felt with hand

Should be free from lumps

7) Name the processes used in the manufacture of cement

Batching, Mixing, Transporting, Placing, Compacting, Curing, Finishing

8) Define creep of concrete

Inelastic deformation formed under a sustained load. It is partly due to the viscous flow of cement paste but largely due to the seepage of absorbed colloidal water from cement gel.

9) What is meant by hydration of cement?

The silicates and aluminates of cement react with water to form a binding medium, which solidifies into a hardened mass. This reaction is termed hydration which is exothermic with approximately 120 cal/g being liberated.

10) What is bulking of sand?

The increase in volume of a given mass of fine aggregate caused by the presence of water is known as bulking. It is caused by the films of water which push the particles apart. Its extent depends upon the percentage of moisture present in the sand and its fineness.

11) Define segregation and bleeding

Separation of coarse aggregates from the main mass is known as segregation

Separation of cement paste from the main mass is known as bleeding

12) Mention the methods for curing concrete

1) Ponding of water over the concrete surface 2) Covering concrete with damp earth 3) Sprinkling with water 4) covering the surface with water proof paper 5) Membrane curing 6) Chemical curing 7) Steam curing 8) Curing by infrared radiation, 9) Electrical curing

13) What are the different types of form work?

Timber F.W., Plywood F.W., Steel F.W.

14) What are the principle techniques used for placing concrete under water?

1) Placing in dewatered caisson or cofferdam 2) Tremie method, 3) Bucket placing 4) Placing in bags 5) Prepacked concrete

PART –B (POSSIBLE QUESTIONS)

- 1). Explain the various types of methods adopted for compacting concrete
 - 2). Explain any four methods of non-destructive tests conducted on concrete
 - 3) Describe with flow diagrams the dry process and wet process of manufacture of cement
 - 4) Briefly explain the various stages of manufacture of concrete
 - 5) Explain the method used in underwater concreting
 - 6) Explain the various tests conducted on fresh concrete
 - 7) Explain the minerals and admixtures that are used in concrete
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