

# 12223

**11122**

**3 Hours / 100 Marks**

Seat No.

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*Instructions* – (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

**Marks**

1. a) Attempt any **THREE** of the following: **12**

(i) Enlist four types plastics used as construction material.

(ii) Define Tremix concreting. State equipments used for Tremix concreting.

(iii) State the necessity of soil reinforcing. State any two soil reinforcing techniques.

(iv) Define hoisting equipment. Enlist four types of hoisting equipment.

b) Attempt any **ONE** of the following: **6**

(i) With the help of neat labelled sketch, explain the principle and working of tower crane.

(ii) With the help of neat labelled sketch, explain the working and output of power shovel.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) Define artificial timber. State four properties of artificial timber.
  - b) Enlist any four precautions during prestressing of members.
  - c) What is Slip formwork? State any two types of structures where slip formwork is used advantageously.
  - d) Draw a neat labelled diagram of jaw crusher.
  - e) Enlist the factors deciding the economic life of the equipment.
- 3. Attempt any TWO of the following:** **16**
- a) With the help of a neat labelled sketch, explain tremay method of underwater concreting.
  - b) An eleven storey building is to be constructed in a thickly populated area. Suggest suitable equipment and machinery for its construction. State the precautions to be taken for this construction.
  - c) A large amount of fine aggregates is required to be transported for a dam site in a very rough terrain. Distance for conveying is about 1.5 km. Suggest suitable conveying equipment and describe with a neat sketch.

4. a) Attempt any **THREE** of the following: 12
- (i) Enlist types of fibres used as construction material. State one use of each.
  - (ii) Enlist four uses of ready mix concrete.
  - (iii) State any four prefabricated components used in modern construction.
  - (iv) With the help of neat labelled sketch describe in brief sheep foot roller.
- b) Attempt any **ONE** of the following: 6
- (i) Draw a layout of automatic concrete plant. Describe in brief its working.
  - (ii) Draw a neat flow diagram of various operations for the production of artificial sand. Describe in brief its working.
5. Attempt any **FOUR** of the following: 16
- a) Explain the procedure of Roller compacted concrete.
  - b) With the help of neat sketch explain the advantages of telescopic props.
  - c) Explain the terms :
    - (i) prefabrication
    - (ii) precast.
  - d) Draw a neat sketch of tilting type concrete mixer and label the parts.
  - e) With the help of neat sketch explain in brief needle vibrator.

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**Marks**

**6. Attempt any TWO of the following:**

**16**

- a) Explain with a neat labelled sketch the procedure of vacuum dewatering concrete.
  - b) With the help of neat sketch, explain the working of Dragline.
  - c) With the help of neat sketch, explain the working of pile driving equipment.
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