

12223

15116

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
(6) Preferably, write the answer in sequential order.

Marks

1. a) **Attempt any THREE of the following :** **12**
- (i) Define acoustics. State any four uses of acoustic materials.
 - (ii) Define prestressed concrete. State four precautions to be taken during prestressing of members.
 - (iii) Draw a neat sketch of telescopic props and label the parts.
 - (iv) State four types of cranes with one use of each.
- b) **Attempt any ONE of the following :** **6**
- (i) Under which situation tower crane is used ? Explain its working with sketch.
 - (ii) Describe in brief, with a neat sketch, the working and output of bulldozer.

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- 2. Attempt any FOUR of the following :** **16**
- a) Enlist different types of plastics.
 - b) Explain any one method of underwater concreting with sketch.
 - c) What is pumped concrete ? Give its three advantages.
 - d) Draw a neat labelled diagram of Transit miner.
 - e) Enlist the factors deciding the economic life of the equipment. Explain any one.
- 3. Attempt any TWO of the following :** **16**
- a) Explain the procedure of vacuum dewatering concreting, with the help of labelled sketch.
 - b) Erosion control over the steep slopes of embankments is to be carried out. Suggest and describe a suitable strengthening technique to do the same.
 - c) A large quantity of aggregate are to be transported from crusher to a dam site. Suggest and describe suitable conveying equipments.
- 4. a) Attempt any THREE of the following :** **12**
- (i) Give the importance and uses of –
 - (1) Micro-silica
 - (2) Artificial sand
 - (ii) Differentiate is pre-tensioning and post-tensioning w.r.t. any two points.
 - (iii) State the principal requirement of jointing of structural members in prefabricated construction work.
 - (iv) What is JCB ? Draw a labelled sketch and state its uses.
- b) Attempt any ONE of the following :** **6**
- (i) Explain with labelled sketch working of automatic concrete plant.
 - (ii) Why artificial sand are popular now a days ? Explain with sketch the equipment for production of artificial sand.

5. Attempt any FOUR of the following : 16

- a) Explain effect of aspect ratio and percentage of steel fibers on strength of concrete.
- b) Explain the process of concreting with slip forms.
- c) Enlist the equipment required for multistoreyed building.
- d) With the help of neat sketch explain working of needle vibrator.
- e) Draw a neat labelled diagram of tilting type concrete miner. Explain in brief its working.

6. Attempt any TWO of the following : 16

- a) Draw operational flow chart of RMC unit and explain its working.
 - b) Suggest the suitable type of rollers for earthen dam. Explain their working with the help of neat sketches.
 - c) What is special equipment ? What are the precautions necessary to be taken before employing special equipment on site ?
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