

22204

24225

3 Hours / 70 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.
  - (5) Assume suitable data, if necessary.
  - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) State the role of civil engineering in human life.
- (b) List any two applications of irrigation engineering.
- (c) List any four natural construction materials.
- (d) State any two methods of quarrying of stones.
- (e) Enlist any four types of special bricks.
- (f) Enlist any two uses of "Plaster of Paris".
- (g) Enlist any four properties of Ferrocrete.



- 2. Attempt any THREE of the following : 12**
- (a) Write any four criteria for selection of construction materials.
  - (b) Explain eco-friendly building materials in brief. State any two properties of it.
  - (c) State the requirement of good building stone.
  - (d) Classify aggregates according to size.
- 3. Attempt any THREE of the following : 12**
- (a) Explain the procedure of manufacturing of burnt brick.
  - (b) Draw the flow diagram of wet process of manufacturing of cement.
  - (c) State any four types of glass with its suitability.
  - (d) State properties and uses of geo-cement.
- 4. Attempt any THREE of the following : 12**
- (a) Explain defects in timber with neat labelled sketches (any 4).
  - (b) Give two applications of pre-cast concrete blocks.
  - (c) Enlist the various thermal insulating materials and state any two properties of insulating materials.
  - (d) State important properties and uses of geo-polymer cement.
  - (e) Enlist any four properties of good paint.
- 5. Attempt any THREE of the following : 12**
- (a) Define bitumen and state the different forms of bitumen.
  - (b) Write the significance of soil investigation before starting the construction.
  - (c) State the uses (two each) of the following construction materials :
    - (i) Soda lime glass
    - (ii) Ferrous metal

- (d) State the two uses of following construction materials :
  - (i) Hollow blocks
  - (ii) Pavement blocks
- (e) State any two properties and any two uses of fly ash.

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

**12**

- (a) State four types of special mortars and give one use of each.
  - (b) State the situations where following points are used :
    - (i) Oil paint
    - (ii) Distemper
    - (iii) Varnishes
    - (iv) Cement paint
  - (c) Write any four uses of rice husk.
  - (d) Explain properties of Agro-waste material. State its importance in construction.
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