

22204

21718

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) List any four artificial construction materials.
- (b) State the factors on which the selection of type of materials depend.
- (c) List the four tools required for dressing of stone.
- (d) List major ingredients of cement.
- (e) State any two uses of precast concrete blocks.
- (f) State any two uses of "Plaster of Paris".
- (g) Give any two uses of granite and marble polishing waste.

2. Attempt any THREE of the following :

12

- (a) Describe the factors for selection of construction materials on the basis of strength.

- (b) State the role of civil engineer in the field of transportation engineering.
- (c) Describe the selection criteria for selecting stone for face work of building.
- (d) Explain defects in timber with neat sketch.

3. Attempt any THREE of the following :

12

- (a) Draw neat sketches of :
 - (i) Conventional bricks and
 - (ii) Standard bricks showing all the dimensions
- (b) State any four situations where hollow concrete block masonry is used.
- (c) Write the field tests performed on bricks for its suitability.
- (d) State suitability of :
 - (i) Water proofing materials and
 - (ii) Sound insulating materials

4. Attempt any THREE of the following :

12

- (a) Draw a neat sketch of cross-section of an exogenous tree and label the parts.
- (b) Write any four uses of plywood.
- (c) State situations where sound insulating and damp proofing materials are used.

- (d) State the applications of geo-polymer cement.
- (e) State the situations where following paints are used :
 - (i) Oil paints
 - (ii) Distempers
 - (iii) Varnishes
 - (iv) Cement paints

5. Attempt any THREE of the following :

12

- (a) Describe four steps in operation of stone blasting.
- (b) Explain with neat sketch patterns provided in the dressing of trap stone.
- (c) Suggest the type of cement used for the following :
 - (i) For modular construction where form work needs to be removed early for re-use.
 - (ii) Mass concreting such as construction of dam.
 - (iii) Decorative works in external surfaces of building.
 - (iv) Cementing the oil well.
- (d) Classify burnt clay bricks.
- (e) Write two uses of each :
 - (i) Fly ash
 - (ii) Blast furnace slag

P.T.O.

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

12

- (a) State properties of good mortar.
 - (b) Write four types of special mortars and give one use of each.
 - (c) Write any four uses of rice husk.
 - (d) Write the situations where Geosynthetic material products and artificial timber is used.
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