



# 17209

21718

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- 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) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
  - (7) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

- |   | <b>Marks</b> |
|---|--------------|
| <b>1. Attempt any ten of the following :</b>                                | <b>20</b>    |
| a) Give physical classification of rocks.                                   | <b>2</b>     |
| b) Enlist four basic areas of civil engineering.                            | <b>2</b>     |
| c) Explain igneous rocks in brief.  | <b>2</b>     |
| d) What is meant by dressing of stone ?                                     | <b>2</b>     |
| e) What are different brand names under which cement is produced in India ? | <b>2</b>     |
| f) Give the standard dimensions for   |              |
| i) conventional brick   |              |
| ii) standard brick.   | <b>2</b>     |
| g) Enlist major ingredients of cement.                                      | <b>2</b>     |

**P.T.O.**

**Marks**

- |   |           |
|---|-----------|
| h) Explain jute as a construction material with uses.   | 2         |
| i) Define 'damp proofing' and 'water proofing'.   | 2         |
| j) State the names of thermal insulating materials.   | 2         |
| k) Name any four finishing materials used in building construction.   | 2         |
| l) Give any four properties of plastic paint.   | 2         |
| m) Give any two uses of granite and marble polishing waste.   | 2         |
| n) Explain any two properties of blast furnace slag.  | 2         |
| <b>2. Attempt any four of the following :</b>   | <b>16</b> |
| a) Write any four criteria for selection of construction materials.   | 4         |
| b) Explain the role of transportation engineering in human life.  | 4         |
| c) What is quarrying of stone and explain different methods of quarrying from bedrock ?                                   | 4         |
| d) Enlist properties of bituminous materials used in civil engineering works.   | 4         |
| e) What is soil ? Explain suitability of sand and clay in the construction work.  | 4         |
| f) Give the procedure of field slaking of lime for plaster or white washing.  | 4         |
| <b>3. Attempt any four of the following :</b>   | <b>16</b> |
| a) Give in detail the following constituents of brick clay :  |           |
| i) Useful constituents  |           |
| ii) Harmful constituents.   | 4         |
| b) Explain any four common field test on bricks.  | 4         |
| c) State the importance of flooring files and roofing tiles in building and give two names of flooring and roofing files. | 4         |
| d) What are different properties of glass ?   | 4         |
| e) Define aggregate and give the properties of fine aggregate and coarse aggregate.                                       | 4         |
| f) State the advantages of artificial sand over natural sand (any four).  | 4         |



[3]

17209

Marks

- 4. Attempt any four of the following :** **16**
- a) Explain any two different artificial timber based products. 4
  - b) Define :
    - i) Asphalt ii) Tar State their applications. 4
  - c) State the requirements of good building stone. 4
  - d) Suggest the treatment for the following :
    - i) Water leakages in the slab
    - ii) Building to save from white ants
    - iii) To reduce unwanted heat
    - iv) To reduce noise in particular area. 4
  - e) Write the needs of termite proofing and sound insulating materials. 4
  - f) Explain any four properties of geosynthetic material and its application in construction. 4
- 5. Attempt any four of the following :** **16**
- a) What are the ingredients of good mortar and explain how you decide good mortar. 4
  - b) State the properties of good timber. 4
  - c) What are the types of paints used ? State suitability of each. 4
  - d) Explain; why you need, agro and industrial waste as construction materials. 4
  - e) Write any four applications of construction waste. 4
  - f) What is meant by fly ash and state any four properties of fly ash ? 4

**Marks**

- 6. Attempt any four of the following :** **16**
- a) What are the characteristics of good brick earth ? **4**
  - b) Enumerate laboratory test for cement and explain in brief any one. **4**
  - c) What types of aggregates are used for making good concrete ? State their geological names. **4**
  - d) Write short notes on :
    - i) White cement
    - ii) Coloured cement. **4**
  - e) List any four properties of thermal insulating materials. **4**
  - f) Write any four required properties of waterproofing materials. **4**
-