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Total No. of Questions—12]

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Seat No.	
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[4957]-102

S.E. (Civil) (I Sem.) EXAMINATION, 2016
BUILDING MATERIALS AND CONSTRUCTION
(2008 PATTERN)

Time : Three Hours

Maximum Marks : 100

- N.B. :—**
- (i) Answer *three* questions from Section I and *three* questions from Section II.
 - (ii) Answers to the two Sections should be written in separate answer-books.
 - (iii) Neat diagrams must be drawn wherever necessary.
 - (iv) Figures to the right indicate full marks.
 - (v) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
 - (vi) Assume suitable data, if necessary.

SECTION I

1. (a) Comment if G + 2 building is to be constructed on black cotton soil. [6]
- (b) Explain step by step procedure of plinth filling with sketch. [6]

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- (c) Explain the following with sketches : [6]
- (i) Through stone
 - (ii) Spalls
 - (iii) Frog.

Or

2. (a) Define building. Explain functions of foundation. [6]
- (b) Write a short note on Header bond. [6]
- (c) Compare strap footing and raft foundation. [6]
3. (a) Compare hollow concrete blocks and solid concrete blocks, consider their size, shape and laying. [6]
- (b) Explain ideal requirements of form work. [6]
- (c) State the functions of cavity wall. [4]

Or

4. (a) Write short notes on : [6]
- (i) Reinforced brick column
 - (ii) Composite masonry.
- (b) Draw neat and labelled sketch of form work for staircase. [6]
- (c) Write down technical advantages of block masonry. [4]
5. (a) Explain the functional requirements of flooring materials. [6]

- (b) Describe with sketch lean to roof. [4]
- (c) Explain the following with sketches : [6]
- (i) Ridge piece
 - (ii) Purlin
 - (iii) Skirting.

Or

6. (a) Explain the construction of vitrified tiles flooring with sketch. [6]
- (b) Explain the detailed procedure of fixing of A/C sheet with angle purlin. [6]
- (c) Explain the following with sketches : [4]
- (i) Eaves board
 - (ii) Tie beam.

SECTION II

7. (a) State different types of fixtures and fastenings used in doors and window. Explain any *three* with neat sketches. [6]
- (b) Explain step by step procedure of plastering to new wall. [6]
- (c) Draw neat and labelled sketch of arch and show any *four* parts of it. [6]

Or

8. (a) Define the following technical terms : [6]
- (i) Chajja
 - (ii) Scaffolding
 - (iii) Horn
 - (iv) Reveal.
- (b) Write short notes on : [6]
- (i) Collapsible door
 - (ii) Skylight window.
- (c) State objectives of painting. Explain any *two* types of paintings. [6]
9. (a) Explain step by step procedure for design of staircase for residential building. [6]
- (b) Comment safely precaution in the construction of Apartment building. [4]
- (c) State types of shoring. Explain flying shores. [6]

Or

10. (a) Design suitable staircase for a residential building using the following data : [8]
- (i) Size of stair hall — 4.50×2.40 m
 - (ii) Floor to floor height — 3.00 m
 - (iii) Wall thickness — 230 mm
 - (iv) Thickness of slab — 110 mm.
- Assume suitable data if necessary.
- Draw detailed section and plan.

- (b) Write a short note on shoring. [4]
 - (c) State safety measures in demolition of high rise building in crowded area. [4]
11. (a) Define seasoning of timber. Explain engineering properties of timber. [6]
- (b) Write short notes on : [6]
- (i) Thatch covering
 - (ii) Eco-friendly material.
- (c) Write down engineering properties of : [4]
- (i) Glass
 - (ii) Gypsum.

Or

12. (a) State the defect in timber. Explain any *three* defects in detail. [6]
- (b) Write short notes on : [6]
- (i) Green building materials
 - (ii) Ceramic products.
- (c) Write down engineering properties of : [4]
- (i) Aluminium
 - (ii) Glass.