Total No. of Questions—**12**] [Total No. of Printed Pages—**4+2**

Seat No.	

[4757]-102

S.E. (Civil) (First Semester) EXAMINATION, 2015

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 answers books.

(*iii*) Neat diagrams must be drawn wherever necessary.

(*iv*) Assume suitable data, if required.

Section I

1. (*a*) It is proposed to construct a residential building on black cotton soil. As a civil engineer; you have two choices, isolated column footing and pile foundation. Comment with reason, which you would select. [6]

P.T.O.

(*b*) Explain the following with neat sketches : [6]

(*i*) DPC

(*ii*) QC

(*iii*) Bed

(*iv*) Frog.

(*c*) Compare Stone masonry and Brick masonry. [4]

Or

2. (*a*) Compare English and Flemish bond with sketch of plan. [6]

(*b*) Explain the following with neat sketches : [6]

(*i*) Plinth

(*ii*) Pointing

(*iii*) Bond

(*iv*) Foundation.

(*c*) State the circumstances where mat foundation and strap footing is used. [4]

3. (*a*) Write short notes on : [6]

(*i*) Laying of block

(*ii*) Cavity wall.

(*b*) Draw neat and labelled sketch of form-work for combined beam and slab. [6]

(*c*) Define composite masonry. State the advantages of it. [4]

Or

4. (*a*) Write short notes on : [6]

(*i*) Reinforced brick lintel

(*ii*) Composite masonry.

(*b*) Explain the detailed procedure of manufacturing of concrete blocks. [6]

(*c*) State the ideal requirements of formwork. [4]

5. (*a*) State any *four* flooring tiles available in market. Write down their advantages only. [6]

(*b*) Explain the following with sketch : [6]

(*i*) couple roof

(*ii*) dado

(*iii*) purlin

(*iv*) post plate.

(*c*) Draw neat and labelled sketch of king-post truss. [6]

Or

6. (*a*) Describe the construction of wooden flooring. [6]

(*b*) Explain the following with sketch : [6]

(*i*) collar roof

(*ii*) ridge

(*iii*) skirting

(*iv*) common rafter.

(*c*) Draw neat and labelled sketch of Queen post truss. [6]

Section II

7. (*a*) List the different types of windows used in construction industry. Explain any *one* in detail with a sketch. [6]

(*b*) Enlist various types of plastering. Explain lime plaster in detail. [6]

(*c*) Define an Arch. Draw a semi-circular arch and label the different components of the semi-circular arch. [6]

Or

8. (*a*) Draw a panelled foor (with dimensions) and mention all the components of door. [6]

(*b*) Write a short note on "Louvered Doors and Windows". [6]

(*c*) Define Scaffolding and explain any *one* type of Scaffolding with a neat figure. [6]

9. (*a*) It is proposed to locate a stair in a staircase measuring 3 m × 5 m. Height of the floor is 3.5 m. Design a staircase and draw a plan of the staircase with the relevant details. (Assume the data wherever required). [6]

(*b*) State the safety measures to be taken during the construction of a skyscraper. [6]

(*c*) Explain the method of storage for the following materials : [4]

(*i*) Cement

(*ii*) Steel.

Or

10. (*a*) Write a short note on "Vertical Circulation in Buildings". [6]

(*b*) List different types of staircase. Explain spiral staircase. [6]

(*c*) Enlist the general fire-safety measures to be adopted for a building. [4]

11. (*a*) List minimum two building components where each of the following building materials is used : [6]

(*i*) Glass

(*ii*) Timber

(*iii*) Plaster of Paris.

(*b*) Explain Seasoning of Timber. Describe any *one* method of seasoning of timber. [6]

(*c*) Write a short note on Bamboo as a eco-friendly material in construction. [4]

Or

12. (*a*) Explain the engineering properties of : [6]

(*i*) Plastic

(*ii*) Glass.

(*b*) Write a short note on Ceramics and its applications in construction industry. [6]

(*c*) Write a note on "Eco-friendly Flooring". [4]