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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Third Semester, B.E. - Civil Engineering

Semester End Examination; Dec. - 2015

Building Materials and Construction

Time: 3 hrs

Max. Marks: 100

- Note:** i) Answer any **FIVE** full questions, selecting **ONE** full question from each **unit**.
 ii) Support your answer with neat figures wherever necessary.
 iii) Assume any missing data suitably.

UNIT - I

1. a. What are the purposes of dressing of stones? Mention the advantages of dressing of stones at site. 8
- b. Explain the different types of roof tiles used in practice. 12
- 2 a. Briefly explain the important qualities of good bricks. 6
- b. List the different types of shakes observed in timber. Explain any three of them with neat sketches. 8
- c. What are the objectives of seasoning of timber? Explain. 6

UNIT - II

- 3 a. Briefly explain the purpose of preliminary investigations of soil. 6
- b. Explain the reasons for preferring the isolated RCC column footing and raft foundations and draw the typical sketches of these two foundations and mark the details. 14
- 4 a. Explain various methods adopted to improve the bearing capacity of soils. 6
- b. Explain the necessity of pile foundations and mention the differences between bearing piles and friction piles. 9
- c. What is an under-reamed pile? Explain with a neat sketch. 5

UNIT - III

- 5 a. What is bonding in brick work? List the merits and demerits of English bond and Flemish bond. 6
- b. Draw the longitudinal section and cross section of a typical lintel for an opening in a brick masonry wall showing the details. 6
- c. With neat sketches explain random rubble stone masonry and coursed rubble stone masonry. 8
- 6 a. What is reinforced brick work? Explain with sketches. 6
- b. What is scaffolding? List the types of scaffoldings used in practice. Explain any one of them with a neat sketch. 8
- c. Explain the process of laying marble flooring. 6

UNIT - IV

- 7 a. Draw a neat sketch of a typical king post roof truss and mention the components. 8
- b. A dog legged RCC stair case is required for an office building. Size of Stair room 3 m x 5.5 m. Work out the geometric details and draw the plan and typical sectional elevation. 12
- 8 a. Draw a neat sketch of a collapsible steel door and mention the specific advantages of using them. 8
- b. Draw neat sketches of dormer window and bay window, and explain their specific functions. 12

UNIT - V

- 9 a. Write a brief note on cement plastering and stucco plastering. 8
- b. List the purposes of painting. 4
- c. Explain the detailed process involved in painting new surfaces. 8
- 10a. What is formwork? What are the requirements of an ideal form work? 8
- b. Write a brief note on construction with hallow concrete blocks. 6
- c. What are the advantages of prefabricated constructions? 6

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