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Third Semester B.E. Degree Examination, Dec.2023/Jan.2024
Building Materials and Construction

Time: 3 hrs.*

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the various natural agents responsible for deterioration of stones and different treatment methods adapted to preserve the stone work. (10 Marks)
- b. State the qualities of a good timber. (04 Marks)
- c. Explain the working of Pug mill with the help of a neat sketch. (06 Marks)

OR

- 2 a. State the characteristics of good clay bricks. (06 Marks)
- b. What is bulking of sand? How does it affect concrete mix? (04 Marks)
- c. Explain the following tests conducted on coarse aggregates.
(i) Aggregate impact value test
(ii) Specific gravity test. (10 Marks)

Module-2

- 3 a. Sketch the elevation and plan of (1, 3, 5 and 2, 4, 6 courses) of one brick thick English bond in brick masonry. (06 Marks)
- b. Explain cramped joint and plugged joints used in stone masonry with the help of neat sketches. (06 Marks)
- c. Explain the construction of strap footing with the help of a neat sketch. Also mention the situation where it is used. (08 Marks)

OR

- 4 a. List the different types of partition walls and also explain Brick nogging partition wall with the help of a neat sketch. (10 Marks)
- b. State the functions of foundations. (06 Marks)
- c. List any four situations in which the pile foundation is preferred. (04 Marks)

Module-3

- 5 a. Draw a neat sketch of segmental arch and label the components. (04 Marks)
- b. Draw a neat sketch of king post truss and label the components. (08 Marks)
- c. Define the following elements of pitched roof :
i) Purlin ii) Pitch iii) Truss iv) Common rafter. (08 Marks)

OR

- 6 a. Explain the procedure of laying vacuum dewatered flooring. (04 Marks)
- b. Draw a neat sketch of steel roof truss and label the components. (06 Marks)
- c. What is a lintel? Explain the following types of lintels with the help of neat sketches:
i) R.C.C lintel with chajja projection
ii) Steel lintel. (10 Marks)

Module-4

- 7 a. With the help of a neat sketch, explain the salient features of framed and paneled door (double shutter). (08 Marks)
- b. Plan a dog legged stair for a building in which the vertical distance between the floors is 3.5 mts. The stair hall measures 3m × 5m. (08 Marks)
- c. Explain French window with the help of a neat sketch. (04 Marks)

OR

- 8 a. What is scaffolding? Explain the component parts of scaffolding. (08 Marks)
- b. State the three thumb rules followed to decide the dimensions of a step and common size of steps adapted for residential buildings. (04 Marks)
- c. With the help of a neat sketch, explain collapsible steel door. (08 Marks)

Module-5

- 9 a. Explain the procedure of painting new wooden and steel surfaces. (10 Marks)
- b. What is pointing? Sketch and explain the following types of pointings:
 (i) Flush pointing
 (ii) Struck pointing
 (iii) V-pointing
 (iv) Weathered pointing. (10 Marks)

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OR

- 10 a. What are the requirements of an ideal material for damp proofing? (06 Marks)
- b. With the help of a neat sketch, explain the procedure of applying cement plaster in 2 coats. (06 Marks)
- c. Explain the different defects that may occur in a painting work. (08 Marks)

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