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ET-521(C)

B.Tech. Civil (Construction Management)

Term-End Examination

December, 2014

ET-521(C) : DESIGN DETAILING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. Use of IS 456, steel table and scientific calculator is permitted. Any missing data may be assumed suitably.*

1. (a) Describe briefly, various types of lateral loads which are considered in the design of building structures. 7

(b) Explain how sizes of an RC slab and an RC beam are decided. 7

2. (a) Explain how a T beam is different from a rectangular beam. 7

(b) Draw a sketch showing detailing of reinforcement in a flight of a dog-legged staircase. 7

3. Draw details (typical) of reinforcement in cantilever retaining wall with following details : *14*

Height of retaining wall above ground level = 5100 mm and below ground level is 900 mm. Consider thickness of retaining wall at bottom 625 mm and at top 200 mm. Length of heel slab is 2800 mm and length of toe slab is 1400 mm.

4. (a) An ISMB 300 beam transfers a reaction of 100 kN and a moment of 25 kNm to its welded connection with flange of an ISHB 200 column. Draw neat sketches showing the details of the welded beam-column connection. *7*

(b) What do you understand by "limit state design" ? Discuss briefly. *7*

5. (a) Compare welded and riveted steel connections. *7*

(b) Write a brief note on various types of loads considered in the design of formwork and staging. *7*

6. (a) Explain metal arc welding procedure. *7*

(b) Draw a neat sketch showing typical reinforcement detailing in a rectangular beam. *7*

7. (a) With the help of a block diagram and a pH chart, explain the refrigeration cycle. *7*

(b) Discuss various aspects of presentation of structural drawings. *7*

8. Write short notes on any ***two*** of the following : *2×7=14*

(a) Power Distribution Board

(b) Psychrometric Process

(c) Typical detail of purlin support on truss