

Register Number:  
Name of the Candidate:

**B.Sc. DEGREE EXAMINATION, May 2015**

**(CONSTRUCTION MANAGEMENT)**

**(FIFTH SEMESTER)**

**520: DESIGN CONCEPT OF STRUCTURES**

Time: Three hours

Maximum: 75 marks

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**Answer any ONE questions from each unit**

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**UNIT-I**

**(5×15=75)**

1. Design a plate girder of span 30m. It is subjected to udl of 30kN/m.  
(OR)
2. Design side walls and hopper bottom of a rectangular bunker of capacity 300kN to store coal using M20 concrete and Fe415 steel. Unit Weight of coal is 8kN/m<sup>3</sup> and angle of repose of coal is 25°.

**UNIT-II**

3. i) What are the factors considered for selection of type of bridges?  
ii) Explain about IRC class AA loading cases.  
(OR)
4. Explain the step by step procedure for design of a T beam bridge.

**UNIT-III**

5. What do you understand the term 'ductility'? Explain ductile reinforcement in flexural members.  
(OR)
6. Explain the different types of loading combination of earthquake loading analysis.

**UNIT-IV**

7. Design a circular water tank with flexible base resting on ground to store 50,000 litres of water. The depth of tank is 4m. Use M<sub>25</sub> concrete and Fe<sub>415</sub> Steel.  
(OR)
8. Explain the design procedure of a rectangular water tank.

**UNIT-V**

9. Explain the different types of retaining walls with sketches.  
(OR)
10. Explain the advantages and disadvantages of steel truss bridges.

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