

INSTRUCTIONS TO PAPER SETTERS:

MAXIMUM MARKS: 75

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Apart from question no. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only one question from each unit.
3. Use of relevant Indian Codes/Standards/Guidelines will be permitted.

UNIT – I

Introduction to Seismic design: General principles of seismic design, Review of IS 1893: 2002, Load combinations and permissible stresses, Guidelines for earthquake resistant design, Ductile detailing for seismic design, Analysis of wind forces, Codal provisions.

Concrete structure design: Design of rectangular/circular water tanks on ground level/underground.

[No. of Hours: 10]

UNIT – II

Prestressed concrete: Needs for prestressing, Methods of prestressing; Concept of load balancing, losses of prestress, Design of simple beams.

[No. of Hours: 9]

UNIT – III

Steel structure design: Analysis and design of Riveted and Welded connections, Code requirements, Design and analysis of tension and compression members, Column bases and foundations, Roof trusses.

[No. of Hours: 11]

UNIT – IV

Water tanks and Chimneys: Design of elevated rectangular/circular water tanks and design of staging, Design of chimney.

[No. of Hours: 11]

Text and Reference Books:

1. M.L. Gambhir, "Design of Reinforced Concrete Structures", Prentice Hall of India
2. A.K. Jain, "Limit State Design of Reinforced Concrete Structures", Nem Chand Publishers, Roorkee.
3. Krishna Raju, "Reinforced Concrete", New International Publications.
4. S.N. Sinha, "Reinforced Concrete Design", McGraw Hill Publications.
5. Varghese, P.C., "Limit State Design of Reinforced Concrete", PHI Publications.
6. S. Unnikrishna Pillai, "Reinforced Concrete Design", Tata McGraw Hill Publications
7. C.S. Manohar, "Design of Chimneys".
8. S.K.Duggal, "Design of Steel Structures", McGraw Hill Publications.
9. John E. Lothers, "Design of Steel Structures".
10. L.S.Negi, "Design of Steel Structures". TMH.
11. N.Krishna Raju, "Prestressed Concrete", TMH.