

2014

STRUCTURE-VII

Paper : 7.5

Full Marks : 100

Time : 3 Hours

*The figures in the margin indicate full marks
for the questions.*

1. What is Pre-stressed concrete? 5
2. What is Pre-fabricated structure? What are its advantages? 5
3. i) What is flat slab and what are the advantages of flat slabs? 4
ii) What are the types of flat slabs? Explain with diagrams.
4. Write the definition of the following pre-stressing steel-(any five) 5×2
 - a) Wires
 - b) Strands
 - c) Tendons
 - d) Cables
 - e) Bars
 - f) Bonded and Un-bonded Tendon
5. i) What are the losses in pre-stress concrete? 6
ii) What are domes and what are the uses of dome structures? 4
6. i) What is a grid slab? Draw a diagram and explain its usage. 4
ii) What is the difference between one way and two way slab? 6

(2)

7. Explain the classification of pre-stressing of concrete?
8. What is post-tensioning? Describe the process of Post-tensioning?
9. Draw the structural sections of the following members showing detailed reinforcement and write the covering used in casting-
 - a) One way slabs
 - b) Isolated sloped Footings
 - c) Beams (both singly and doubly reinforced)
 - d) Columns
 - e) Open well staircase
10. Draw the sections of the following Pre-cast members (any five):
 - a) T-section
 - b) Hollow core
 - c) Pile
 - d) L-section
 - e) Inverted T-section
 - f) I-girder

□□□□