



JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), April-May 2015

B. Tech. in Civil Engineering, Semester VI

Roll No.....

CE 601 : CONCRETE STRUCTURES- II

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units and drawing neat sketches wherever, required are an integral part of the answer.
4. Use of IS code is to be permitted.

Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

- i. Post tension prestressing can be done at site. (True/ False)
- ii. Loss of prestress is more in post tensioning system than that in the pre-tensioning system. (True/ False)
- iii. The cost of pre-tensioning system is generally small as compares to the cost of post- tensioning system. (True/ False)
- iv. According to Is :456-1978, for continuous beam having a support width less than Clear Span. (1/12, 1/14, 1/15)
- v. In pile design effective length considered as= ($\frac{4}{3} * \text{length}$, $\frac{2}{3} * \text{length}$, $\frac{4}{6} * \text{length}$).
- vi. Bored piles are known as cast-in situ reinforced concrete piles. (True/ False)
- vii. A partially pre-stressed member is one in which tensile stresses and cracking are permitted under service loads. (True/ False)
- viii. Minimum percentage area of HYSD reinforcement in 150 mm thick water tank will be (0.23,0.24, 0.20).
- ix. Pre-stressing in concrete can be done by means of(thermal methods, hydraulic jacks, support displacement method)
- x. In case of pre tensioned RCC beams shrinkage of concrete is of the order of(3×10^{-4} , 4×10^{-4} , 2×10^{-4})

Q.1B	Short answer type questions (4 questions @ 2.5 marks)	10
i.	Explain types of Piles.	
ii.	Define Pre tensioning and post tensioning.	
iii.	Define end block .why it is used for pre-stress concrete?	
iv.	Explain use of pile cap in pile foundation?	
Q.2	What are the assumptions made in the portal methods and cantilever method for the analysis of building frame for lateral loads?	05
Q.3*	Difference between Bunkers and Silos.	05
	OR	
Q.3	What are the common applications of pre-stressed concrete?	05
Q.4	Define Flat Slab and explain different types of Flat Slabs.	05
Q.5	Difference between pre stressed concrete and R.C.C.	05
Q.6	Explain only steps for pile cap design.	05
Q.7	Explain strength requirement for pre-stressed concrete as per Indian Standard code.	10
Q.8	Design the driven pile if the section adopted is 300 mm X 300 mm and length of pile obtained from soil design is 6 m. service load $P = 600$ KN. Use M20 grade concrete and mild steel reinforcement. and sketch the details of reinforcements.	15
Q.9	A continuous beam with simple supports has two spans each of 8 m. the characteristic dead load is 10 KN/m and the characteristic live load is 15 KN/m .Determine tension steel and compression steel of the beam and sketch the details of reinforcements using working stress method. Adopt M-15 grade concrete and ribbed tor steel.	15
	OR	
Q.9	Design interior panel of a Flat Slab for warehouse to suit the following data: 1. Size of warehouse 24m by 24 m divided into 6 m by 6 m panels. 2. Loading Class - 5 KN/ m ² 3. Materials- M20 grade concrete and Fe-415 HYSD bars.	15
Q.10	Design a rectangular slab 6 m by 4 m in size and simply supported at the edges for a service live load of 4 KN/ m ² . Assume co-efficient of orthotropy (μ) as 0.7. Adopt M20 grade concrete and Fe-415 HYSD bars.	15

