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170766B/120766C

Roll No. ....

**6th Sem / Branch : Civil engineering, Constr. Mgmt.**

**Subject:- Prestressed Stressed Concrete**

Time : 3Hrs.

M.M. : 100

### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory  
(10x1=10)

- Q.1 During erection, the pile of length " $l$ " is supported by a crane at a distance of ..... form the driving end of pile which rests on the ground. (CO2)  
a)  $0.207l$  b)  $0.293l$   
c)  $0.707l$  d)  $0.793l$
- Q.2 Unit weight of RCC is ..... (CO1)  
a)  $20000 \text{ N/m}^3$  b)  $22000 \text{ N/m}^3$   
c)  $24000 \text{ N/m}^3$  d)  $25000 \text{ N/m}^3$
- Q.3 Stress at Neutral Axis is ..... (CO1)  
a) Compressive b) Tensile  
c) Shearing d) Zero
- Q.4 The best suitable method which takes care about safety and serviceability is ..... (CO1)  
a) Working Stress Method  
b) Limit State Method  
c) Ultimate Load Method  
d) None of these
- Q.5 Maximum diameter of steel bar available as per IS 1786:2008 is ..... (CO2)  
a) 40 mm b) 45 mm  
c) 50 mm d) None of these

- Q.6 The magnitude of loss of prestress due to relaxation of steel is in range of ..... (CO1)  
a) 12% to 14% b) 8% to 12%  
c) 2% to 8% d) Zero to 1%
- Q.7 In limit state design, permissible bond stress in case of deformed bars is more than that in plain bars by ..... (CO1)  
a) 25% b) 40%  
c) 50% d) 60%
- Q.8 Normally pre-stressing wires are arranged in the ..... (CO1)  
a) Centre of beam  
b) Upper part of the beam  
c) Lower part of the beam  
d) Any where
- Q.9 Most common method pre-streeing uses for factory production is ..... (CO1)  
a) Lee-Macall System  
b) Freyssinet System  
c) Magnel-Balton System  
d) Long line Method
- Q.10 The purpose of reinforcement in pre-stressed concrete is ..... (CO1)  
a) To resist tensile stress  
b) To provide adequate bond stress  
c) To impart initial compressive stress in concrete  
d) All of the above

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  
(10x1=10)

- Q.11 Pre-stressing helps in avoiding the formation of ..... in tensile zone. (CO1)

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- .12 The downward drag acting on a pile due to movement of surrounding is called ..... (CO2)
- Q.13 Loss of pre-stress is ..... in pre-tensioning system. (CO1)
- Q.14 More the diameter of tendon ..... is the ultimate strength. (CO1)
- Q.15 Minimum grade of concrete required for pre-tensioning is ..... (CO1)
- Q.16 Define casing of piles. (CO2)
- Q.17 Define pile shoe. (CO2)
- Q.18 Define partially pre-formed piles. (CO2)
- Q.19 Define end blocks. (CO1)
- Q.20 Define grouting. (CO1)

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Write the different forms of the pre-stressed tensioned members. (CO1)
- Q.22 Write any five differences between the pre-tensioning method and post-tensioning method of concrete. (CO1)
- Q.23 Write short note on tendons. (CO1)
- Q.24 What is the purpose of temporary gripping device used as pre-stressing equipment? (CO1)
- Q.25 How the steel used pre-stresses concrete can be protected from corrosion. (CO1)
- Q.26 Write the precautions to be considered during the use of vibrators in pre-stressed concreting operations. (CO1)
- Q.27 Write a short note on galvanization. (CO1)

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- Q.28 Write the specifications of admixtures as per IS code, used in pre-stressed concrete. (CO1)
- Q.29 Write the disadvantages of Freyssinet post-tensioning system. (CO1)
- Q.30 Under what conditions the pile foundations can be adopted? (CO2)
- Q.31 Enlist the various types of piles based on material of their construction and describe any one of them. (CO2)
- Q.32 Describe the process vibration method of pile deriving. (CO2)
- Q.33 Write a short note on small diameter bored cast-in-situ piles. (CO2)
- Q.34 What precaution should be taken into consideration during the operation of pile installation? (CO2)
- Q.35 Write the remedial measures to be adopted during the operation of pile installation. (CO2)

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the working of the Freyssinet post-tensioning system with its disadvantages. (CO1)
- Q.37 Write the different forms of the pre-stressed tensioned members and explain the process of construction of any one of them. (CO1)
- Q.38 How the testing of piles can be done by dynamic pile load test. (CO2)

(**Note:** Course outcome/CO is for office use only)

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