

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION, 2016

M.TECH IV SEMESTER

COURSE CODE: 10M13CE432

MAX. MARKS: 25

COURSE NAME: CONSTRUCTION METHODS IMPROVEMENT

COURSE CREDITS: 03

MAX. TIME: 1.5 HR

Note: All questions are compulsory. Draw figure, sketches and give suitable example to illustrate your answers. Assume missing data suitably if required. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. What type of curing systems would you adopt for the following situations? Justify your answer. 2
 - i. In a place where suitable water is scarce
 - ii. When high early strength is desired
2. What are the variables that influence lateral pressure of concrete on formwork? Justify your answer. 2
3. Briefly discuss on different problems occurred in concrete due to poor or inadequate compaction of concrete. 3
4. Describe cold weather problems in concrete and explain how resistance of concrete to the frost action can be improved? 4
5. Find the lateral pressure using ACI formula for the wall of size 15m x 0.35m and height is 3.3m? Assume Rate of pour is 10 cum/hr. and temperature 30 °C. 2
6. What are the different factors for selection of tunneling method for a tunnel construction? 2
7. Briefly discuss on segmental bridge construction technique? 4
8. What type of formwork system can be adopted for high rise building? Justify your answer. 2
9. Calculate the spacing of joist for a slab form work given the following data for the soft wood sheathing of thickness 20mm. The concrete slab is 125mm thick. Unit weight of RCC and timber sheathing are 25.5kN/m³ and 5.5kN/m³ respectively. Imposed load due to workman and equipment are 1.5kN/m² and 7kN/m² respectively. 4

Allowable fiber stress in bending = 8.0MPa
Allowable shear stress = 0.9MPa
Modulus of elasticity = 10GPa
Allowable deflection for sheathing is 1.6 mm.