

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- SEPTEMBER, 2016

M.TECH I SEMESTER

COURSE CODE: 10M11CE111

MAX. MARKS: 15

COURSE NAME: CONSTRUCTION TECHNIQUES

COURSE CREDITS: 03

MAX. TIME: 1 HR

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

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1. On what factors the horizontal pressure on form work due to fresh concrete depends? Justify your answer. Show a typical pressure envelope and design pressure envelope of concrete on formwork. [3]
2. Compare slip form and tunnel form techniques? [2]
3. Write short notes on (i) Form liner (ii) Construction joint [2 x 2 = 4]
4. How can the safety be ensured in formwork? [2]
5. Calculate the spacing of joist for a slab form work with the following data given for the soft wood sheathing of thickness 20mm. The concrete slab is 125mm thick. Unit weight of RCC and timber sheathing are  $25.5\text{kN/m}^3$  and  $5.5\text{kN/m}^3$  respectively. Imposed load due to workman and equipment are  $1.5\text{kN/m}^2$  and  $7\text{kN/m}^2$  respectively.  
Allowable fiber stress in bending = 8.0 MPa  
Allowable shear stress = 0.9 MPa  
Modulus of elasticity = 10GPa  
Allowable deflection 1.6mm for sheathing [4]