JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION

M.Tech. (CM) Ist Semester

COURSE CODE: 10M11CE111   MAX. MARKS: 15

COURSE NAME: Construction Techniques

COURSE CREDITS: 04   MAX. TIME: 1Hour

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q.1   For the data given below, compute the lateral pressure on formwork as per **(4 marks)** CIRIA formula and also draw the design pressure distribution.

D (weight density of concrete)	25 kN/m^3
C_1 (shape constant)	1
R, Rate of rise	1 m/h
C_2, Concrete constituent factor	0.3
Temperature of concrete	25° C
Temperature co-efficient	0.77
H, Form height	6.15 m
H, pour height	6 m

Q.2   Write advantages and disadvantages of Fiber reinforced concrete. Also, **(3 marks)** differentiate between Fiber reinforced concrete and Normal reinforced concrete.

Q.3   Draw the design pressure distribution for a column of dimension 0.5m (width) **(3 marks)** x 1.75m (length) x 10m (height). It is proposed to use OPC concrete without retarder. The concrete temperature at the time of placing is 10° C. The concrete pour speed is 8.75 m^3/h. Assume a maximum pressure of 150 kN/m^2.

Q.4   Design the formwork for a column of cross section 400 mm x 400 mm, and a **(5 marks)** height of 3.5 m. A plywood of 12 mm thickness is available. Permissible bending stress on 12 mm plywood = 14 N/mm^2. Permissible bending moment = 0.2 kN/m. Permissible shear force = 6.16 kN. Permissible deflection = span/360.

Assume two spans, with
Rate of rise = 2 m/h
Temperature of concrete = 15° C
C_w x C_c = 1

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