

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

COURSE CODE (CREDITS): 18B11CE611 (3)

MAX. MARKS: 15

COURSE NAME: CONCRETE TECHNOLOGY

COURSE INSTRUCTORS: Dr. Tanmay Gupta

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Write the difference between wet process and dry process of cement manufacturing. Which process is preferred and why? [2] [CO1]

Q.2 Fine Lime saturation factor if following oxides are present in cement (% quantity): CaO-65, SiO₂ - 20, Al₂O₃ -5, Fe₂O₃ -4, MgO -3.0, Alkalies (K₂O, Na₂O) -1, SO₃ -2. Also calculate Corresponding Calculated Compound Composition using Bogue's equation (may assume 3CaO.SiO₂ content as 54.11%) [3] [CO1]

Q.3 Explain with a neat diagram how hydration of cement happens, explain hydration of silicates with their chemical equations. [3] [CO1]

Q.4 Write a short note on following type of cements [3] [CO1]

- a) Portland slag cement
- b) Rapid hardening cement
- c) Hydrophobic cement

Q.5 As per IS 456 write the desirable qualities of construction water? [1] [CO1]

Q.6 What measures can be taken to reduce bleeding and segregation of concrete? [1] [CO2]

Q.7 Explain any two methods of determining workability of fresh concrete in detail? [2] [CO2]