JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

B.Tech-VI Semester (CE)

COURSE CODE(CREDITS):18B11CE611(3)   MAX. MARKS: 25

COURSE NAME: CONCRETE TECHNOLOGY

COURSE INSTRUCTORS:Dr. Tanmay Gupta   MAX. TIME: 1 Hour 30 Minutes

Note: (a)All questions are compulsory. (b)Marks are indicated against each question in square brackets.(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems. Use of IS 383:2016 is allowed.

Q.1 The strength of a fully matured concrete is 40MPa. Using maturity concept estimatethe strength of identical concrete at 20 days when cured at an average temperature of10°C for 10 hours and 15°C for 04 hours and 18°C for rest of the period in a day. 2[CO2]

Q.2 Differentiate between poorly graded and well graded aggregates. Also explain in detail Test for determination of aggregate crushing value. 3[CO2]

Q.3 (a)What is fineness modulus of aggregate? How is the fineness modulusdetermined?

b) What do you mean by soundness of aggregate? Explain briefly. 4[CO2]

Q.4 Differentiate among compressive strength and tensile strength of concrete.Explain all the factors affecting the strength of concrete. 3[CO1]

Q.5 What do you understand by admixtures, with a neat diagram explain the classification of admixtures. 3[CO3]

Q.6 Find the proportion of fine to coarse aggregate if following grading is given (surface index of combined aggregate is 0.55) 2.5[CO2]

Sieve size within which the particle lies	% of particles within sieve size
20-10 mm	60
10-4.75 mm	40
4.75-2.36 mm	15
2.36-1.18mm	15
1.18mm-600 micron	25
600-300 micron	30
300-150 micron	15

Q.7 Write a short note on following: 7.5[CO3]
  a. While using admixtures what factors affect workability
  b. Potential problems while using plasticizers.
  c. Air entraining admixtures
  d. Construction chemicals for water proofing
  e. Permissible limit for solids as per IS 456 in construction water.