

Code No: 155AQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, February - 2022

CONCRETE TECHNOLOGY

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

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- 1.a) Explain the influence of Bogue's Compounds on properties of cement.
b) Discuss the following:
i) Soundness of cement
ii) Bulking of sand
iii) Consistency of cement. [7+8]
- 2.a) Explain the role of mineral admixtures in the modern concrete technology.
b) List the various types of cement indicating their use for different applications. [7+8]
- 3.a) Describe the various tests for determining the quality of aggregate to be used for concreting work.
b) What is gap graded aggregate? State the advantages of using gap graded aggregates in concrete construction. [7+8]
- 4.a) Describe the types of aggregate and explain the effects of aggregate on properties of concrete.
b) Explain in detail the sampling methods for aggregates. [7+8]
- 5.a) Explain the phenomenon of bleeding and segregation in concrete.
b) What are the various factors which affect the workability of concrete? Explain. [7+8]
- 6.a) Explain about statistical quality control of concrete.
b) Discuss the procedure to determine the setting times of concrete using spring penetration test. [7+8]
- 7.a) Explain any two non-destructive tests in concrete.
b) Explain the procedure of determination of modulus of elasticity of concrete. [7+8]
- 8.a) Explain how Standard Deviation (s) is calculated for estimation of Target Mean Strength of a concrete mix. What is the relation between S and Quality Control on site for casting concrete?
b) Write the procedure of Mix Design with reference to the provisions laid in IS -10262-2009. [7+8]