

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2020

**Course Code: CE361****Course Name: ADVANCED CONCRETE TECHNOLOGY**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer any two full questions, each carries 15 marks.*

Marks

1. a) What are the properties of Bogue's compounds? How can you produce cements of varying properties by changing the composition of cement? (9)
- b) Describe the effect of size and shape of aggregates on concrete. (6)
2. a) Distinguish between bleeding and segregation. What are its causes and control measures? (9)
- b) Explain the properties and uses of air entraining admixtures in concrete. (6)
3. a) State the importance of grading of fine and coarse aggregates in concrete making. Which grading you prefer and why? (9)
- b) Explain the significance of concrete curing. Describe any two methods. (6)

**PART B***Answer any two full questions, each carries 15 marks.*

4. a) Explain the properties, effect and uses of silica fume as a mineral admixture in concrete. (9)
- b) Describe the action of mineral admixtures in concrete properties. (6)
5. a) What are the methods to enhance the strength properties of concrete? Explain any three methods in detail. (9)
- b) Explain the various factors affecting elasticity modulus of concrete. (6)
6. a) List the various factors influencing the mix proportioning. Explain any four. (9)
- b) What is meant by creep in concrete? What are its positive and negative effects on concrete? (6)

**PART C***Answer any two full questions, each carries 20 marks.*

7. a) What is carbonation in concrete and its effect? What are the factors affecting it? (9)

- b) What is the mechanism of sulphate attack on concrete? Explain any two preventive measures. (6)
- c) Write a note on alkali aggregate reaction. What are the factors promoting it? (5)
- 8. a) Explain the mix composition, properties and uses of self compacting concrete. (9)
- b) Write a short note on sprayed concrete. State its advantages and applications? (6)
- c) Explain the various methods to manufacture mass concrete. (5)
- 9. a) Explain the procedure of ultrasonic pulse velocity test. What are the advantages and limitations of this test? (10)
- b) Describe briefly the various types of light weight concrete. State its properties and applications. (10)

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