

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S,FE) Examination January 2023 (2015 scheme)

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

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| 1 | a) What are the properties of Bogue's compounds? | (6) |
| | b) State the advantages of blended cements. | (5) |
| | c) Explain the methods to reduce the size of aggregate samples. | (4) |
| 2 | a) What are the various methods to improve workability? Explain any two. | (6) |
| | b) Explain the properties and uses of retarders in concrete. | (5) |
| | c) Explain the significance of curing concrete. | (4) |
| 3 | a) Describe the action and uses of superplasticizers on concrete. | (6) |
| | b) What are the properties and uses of low heat cement? | (5) |
| | c) What is the role of aggregate in concrete? | (4) |

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

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| 4 | a) What is the effect of fly ash on fresh and hardened concrete? | (6) |
| | b) Write a short note on trial mixes in concrete mix proportioning. | (5) |
| | c) Distinguish between characteristic strength and target strength in mix design. | (4) |
| 5 | a) What is meant by creep in concrete? What are its positive and negative effects? | (6) |
| | b) Explain the various factors affecting elasticity modulus of concrete. | (5) |
| | c) What is secant modulus of concrete? How is it determined? | (4) |
| 6 | a) Explain the procedure for concrete mix design by IS method. | (9) |
| | b) Write a short note on tensile strength of concrete. | (3) |
| | c) Explain any 3 factors affecting shrinkage of concrete. | (3) |

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

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| 7 | a) Explain Schmidt's rebound hammer test to assess the strength of concrete. | (8) |
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- b) What is sulphate attack in concrete? How is it controlled? (6)
- c) Explain any 3 methods to reduce the permeability of concrete. (6)
- 8 a) Write a short note on ready mixed concrete. What are its advantages? (8)
- b) How is self compacting concrete made? What are its advantages? (6)
- c) Write a short note on mass concrete and slip form construction. (6)
- 9 a) Explain the procedure of ultrasonic pulse velocity test. What are the advantages and limitations of this test? (10)
- b) Describe the properties and uses of fibre reinforced concrete. (6)
- c) How the concreting is done under water? (4)
