

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
V SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

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 is gap graded aggregate? State the advantages of using gap graded aggregates in concrete construction. | (4) |
| | b) What are the various factors which affect the workability of concrete? Explain. | (7) |
| | c) Distinguish between plasticizers and super plasticizers. | (4) |
| 2 | a) What is the role of chemical admixtures in concrete? Mention four types of chemical admixtures and their functions. | (7) |
| | b) Explain in detail the sampling methods for aggregates. | (6) |
| | c) What are the stages of transformation of fresh concrete to hardened concrete? | (2) |
| 3 | a) What are the different components of hardened concrete? What is a transition zone? | (6) |
| | b) Explain the chemical composition, properties and uses of high alumina cement, quick setting and blast furnace slag cement. | (9) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|--|------|
| 4 | a) Discuss on carbonation shrinkage. | (5) |
| | b) Why is cube strength more than cylinder strength in concrete? | (4) |
| | c) Discuss the factors to be considered in the design of concrete mixes. | (6) |
| 5 | a) Discuss the step-by-step procedure of BIS method of concrete mix design. | (15) |
| 6 | a) Describe the influence of mineral admixtures in concrete. Explain any two mineral admixtures in detail. | (10) |
| | b) Define creep. List the factors affecting creep. | (5) |

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Discuss the factors influencing the properties of fibre reinforced concrete. (6)
- b) Explain alkali silica reaction. (6)
- c) Explain any two non-destructive tests in concrete. (8)
- 8 a) Describe the causes of corrosion of steel in concrete. (6)
- b) Write a note on:
- a. Ready mixed concrete (10)
- b. Mass concrete
- c) State the advantages and limitations of UPV method. (4)
- 9 a) What is the influence of prefabrication technology on modern construction industry? (10)
- b) Describe the influence of various components of high strength concrete. (10)
