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INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

III B.Tech I Sem Regular End Examination, February 2022

Concrete Technology

(CIVIL)

Time: 3 Hours.

Max. Marks: 70

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

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|-------|---|----|-----|-----|
| 1. a) | Write any two mineral admixture names | 2M | CO1 | BL1 |
| b) | Give two examples of two different grades of concrete | 2M | CO1 | BL1 |
| c) | Draw the flow chart of manufacturing of cement. | 2M | CO2 | BL1 |
| d) | What is the significance of gap graded aggregate? | 2M | CO2 | BL1 |
| e) | What is the effect of temperature on fresh concrete? | 2M | CO3 | BL1 |
| f) | Define initial and final setting time of concrete | 2M | CO3 | BL1 |
| g) | Define water cement ratio. | 2M | CO4 | BL1 |
| h) | Write two non destructive test names. | 2M | CO4 | BL1 |
| i) | What is the contribution of fibers in FRC? | 2M | CO5 | BL1 |
| j) | What is accelerated curing of concrete? | 2M | CO5 | BL1 |

PART- B

(10*5 Marks = 50 Marks)

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| 2 a) | Explain the hydration process of cement | 5M | CO1 | BL4 |
| b) | Narrate the structure of hydrated cement | 5M | CO1 | BL4 |

OR

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|---|--|-----|-----|-----|
| 3 | Write the test procedure to find out any two physical properties of cement | 10M | CO1 | BL1 |
|---|--|-----|-----|-----|

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| 4 a) | Explain clearly Alkali-aggregate reaction | 5M | CO2 | BL4 |
| b) | Write the classification of aggregates | 5M | CO2 | BL1 |

OR

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|---|---|-----|-----|-----|
| 5 | Write the physical properties and explain tests to find out the properties. | 10M | CO2 | BL1 |
|---|---|-----|-----|-----|

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|---|---|----|-----|-----|
| 6 | a) What is the setting time of concrete? | 5M | C03 | BL1 |
| | b) Write the testing procedure to find workability of concrete. | 5M | C03 | BL1 |

OR

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|---|---|-----|-----|-----|
| 7 | Write the step - by- step procedure to manufacture of concrete. | 10M | C03 | BL1 |
| 8 | a) What is meant by 'maturity concept'? | 5M | C04 | BL1 |
| | b) Describe the slump cone test procedure with diagram. | 5M | C04 | BL2 |

OR

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|---|---|-----|-----|-----|
| 9 | Calculate the concrete mix design of concrete for M40 grade | 10M | C04 | BL3 |
| | a) Grade designation M40 | | | |
| | b) Type of cement - PPC | | | |
| | c) Nominal size of aggregate - 20mm | | | |
| | d) Workability - 75mm | | | |
| | e) Maximum cement content 450 Kg/m ³ | | | |
| | f) Chemical admixture - super plasticizer | | | |

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| 10 | a) How to achieve quality control of concrete? | 5M | C05 | BL |
| | b) Define acceptance criteria | 5M | C05 | BL |

OR

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| 11 | Write the properties of cellular concrete. | 10M | C05 | BL |
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