**20CE304**

**Hall Ticket Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **II/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **March, 2022** | **Civil Engineering** | | |
| **Third Semester** | **Concrete technology** | | |
| **Time:** Three Hours | | **Maximum: 7**0 Marks | |
| *Answer Question No.1 compulsorily.* | | | (14X1 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. | a) | | Write any two types of tests conducted on cement | CO1 |  |
|  | b) | | What is meant by hydration of cement? | CO1 |  |
|  | c) | | Write down the oxide composition of cement. | CO1 |  |
|  | d) | | Write any two laboratory tests on coarse aggregate. | CO2 |  |
|  | e) | | Write about gel space ratio. | CO2 |  |
|  | f) | | Write any three mineral admixtures. | CO2 |  |
|  | g) | | What is meant by durability of concrete? | CO3 |  |
|  | h) | | Write the formula for flexural strength of concrete. | CO3 |  |
|  | i) | | What are the retarders and accelerators? | CO3 |  |
|  | j) | | Define bleeding | CO3 |  |
|  | k) | | What is self-compacting concrete? | CO4 |  |
|  | l) | | What is no-fines concrete? | CO4 |  |
|  | m) | | What characteristics strength of M35 grade of concrete? | CO4 |  |
|  | n) | | What is high performance concrete? | CO4 |  |
| **Unit - I** | | | | | |
| 2. | a) | What are the bogue’s compounds? Explain about those compounds briefly. | | CO1 | 7M |
|  | b) | Explain the manufacturing of cement by dry process. | | CO1 | 7M |
| **(OR)** | | | | | |
| 3. | a) | Write about the classification of aggregates in detail. | | CO1 | 7M |
|  | b) | What are the requirements of water for making concrete? | | CO1 | 7M |
| **Unit - II** | | | | | |
| 4. | a) | What are the different types of tests to measure the workability of concrete? Explain any one of them in detail. | | CO2 | 7M |
|  | b) | Explain the factors affecting the workability of concrete. | | CO2 | 7M |
| **(OR)** | | | | | |
| 5. | a) | Write a brief note on flexural strength of concrete with neat sketch. | | CO2 | 7M |
|  | b) | Explain the factors affecting the strength of concrete. | | CO2 | 7M |
| **Unit - III** | | | | | |
| 6. |  | Write about chloride effect and sulphate effect on concrete and their control methods? Explain any one in detail. | | CO3 | 14M |
| **(OR)** | | | | | |
| 7. | a) | Explain about the plasticizer & super plasticizer and discuss their effect on the properties of concrete. | | CO3 | 7M |
|  | b) | Write about Fly ash and Silica fume and discuss their effects on the properties of concrete. | | CO3 | 7M |
| **Unit - IV** | | | | | |
| 8. |  | Explain the steps to be followed as per IS recommendations methods of mix design. | | CO4 | 14M |
| **(OR)** | | | | | |
| 9. | a) | What is light weight concrete? State its advantages | | CO4 | 7M |
|  | b) | Write a short note on fiber reinforced concrete. | | CO4 | 7M |

****