

Reg. No. :

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**Question Paper Code: 95Q05**

M.E. DEGREE EXAMINATION, NOV 2019

Elective

Structural Engineering

19PSE506 – ADVANCED CONCRETE TECHNOLOGY

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (10 x 2 = 20 Marks)

- |     |   |        |     |
|-----|---|--------|-----|
| 1.  | Differentiate artificial and recycled aggregate.                | CO1- U | (2) |
| 2.  | Write the Bogue's compounds in cement                           | CO1- U | (2) |
| 3.  | How do you control the sulphate attack?                         | CO2- U | (2) |
| 4.  | Mention some corrosion inhibitors used in RCC.                  | CO2- U | (2) |
| 5.  | List out the concepts of mix proportioning.                     | CO3- U | (2) |
| 6.  | What is high strength concrete?                                 | CO3- U | (2) |
| 7.  | State the importance and need of nondestructive testing.        | CO4- U | (2) |
| 8.  | What are the various applications of Half-cell potential meter? | CO4- U | (2) |
| 9.  | Differentiate Sprayed and pumped concrete.                      | CO5- U | (2) |
| 10. | What are the advantages of roller compacted concrete?           | CO5- U | (2) |

PART - B (5 x 16 = 80 Marks)

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|-----|---|-------|------|
| 11. | (a) Discuss in detail about various admixtures used in ready mix concrete plant and their applications. | CO1-U | (16) |
|     | Or  |       |      |
|     | (b) How do you ensure quality of concrete? Explain in detail.   | CO1-U | (16) |
| 12. | (a) Explain the factors contributing to cracks in concrete.   | CO2-U | (16) |
|     | Or  |       |      |
|     | (b) Explain the corrosion control measures in detail.   | CO2-U | (16) |

13. (a) What are the tests carried out in fresh stage of self-compacting concrete to determine its workability? Explain any two tests with neat sketch. CO3-U (16)
- Or
- (b) Explain the Design Procedure for IS method of Concrete Mix Design. CO3-U (16)
14. (a) Suggest a nondestructive testing method to find the location of areas of high reinforcement corrosion risk in marine structures, bridge decks and abutments. Explain that method in detail with diagrams. CO4-App (16)
- Or
- (b) Explain infrared and radioactive methods in detail and state its applications and limitations. CO4-App (16)
15. (a) Explain waste material based concrete in detail. CO5- U (16)
- Or
- (b) Explain the process of roller compacted concrete in detail. CO5- U (16)