

SUBJECT: CONCRETE TECHNOLOGY

Day: Wednesday
Date: 15/05/2019

S-2019-2555

Time: 02.30 PM TO 05.30 PM
Max Marks. 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Use of scientific non-programmable calculator is **ALLOWED**
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- Q.1**
- a) Explain “Dry process of manufacturing cement”. (05)
 - b) Explain alkali aggregate reaction and factor promoting the alkali aggregate reaction. (05)
- OR**
- a) Explain “Grading of aggregates”. (05)
 - b) Explain “Hydration of cement and ASTM classification”. (05)
- Q.2**
- a) Explain the factors affecting workability. (05)
 - b) Explain in brief “Methods of curing”. (05)
- OR**
- a) Explain analysis of fresh concrete. (05)
 - b) What is the difference between segregation and bleeding? (05)
- Q.3**
- a) Define the shrinkage, Explain plastic shrinkage and dry shrinkage. (05)
 - b) Explain the factors affecting creep in concrete. (05)
- OR**
- a) Explain non-destructive testing and Explain method of ultrasonic pulse velocity method? (05)
 - b) Explain Creep – time curve. (05)
- Q.4**
- a) Explain DOE method of concrete mix design in brief. (05)
 - b) Explain selection of water cement ratio in mix design concrete. (05)
- OR**
- a) Define design mix and explain the factors governing the selection of mix proportions. (05)
 - b) Explain mix design concept and variables in mix design. (05)
- Q.5**
- a) Explain plasticizers (Water Reducers) (05)
 - b) Explain compatibility of superplasticizers and cement. (05)
- OR**
- a) Write a short note on self-compacting concrete (05)
 - b) Explain roller compacted concrete. (05)
- Q.6**
- a) Write a short note on light weight concrete. (05)
 - b) Explain durability of concrete. What are the factors affecting durability? (05)
- OR**
- a) Write a short note on polymer concrete and Ferro-cement (05)
 - b) Explain the difference between under water concreting and cold weather concreting (05)