

Hall Ticket Number :

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R-11 / R-13

Code: 1G674

IV B.Tech. I Semester Supplementary Examinations November 2018

Concrete Technology

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. What is hydration of cement? What are the Bogue's compounds? Explain the importance of Bogue's compounds.
2. Discuss the common classification of aggregates. Explain in detail the effect of properties of aggregates and grading of aggregates on the properties of concrete.
3. Explain the workability, factors affecting workability and any two methods of testing workability of concrete.
4. What are the factors affecting the strength of concrete? Explain various types of curing. Calculate the gel/space ratio and strength of concrete having 600g of cement and 0.45W/e ratio at 50% hydration and at full hydration.
5. Explain the procedure for compressive strength testing or split tensile strength testing. What is the need for non-destructive tests in concrete testing? Write the various types of non-destructive tests on concrete.
6. a) Define creep and explain the role of aggregate in creep of concrete. What is the significances of zero creep concrete.
b) What is Poisson ratio? How it varies with variation in stress? Explain various types of shrinkage.
7. What are various methods of proportioning of concrete. Design M₃₅ mix using IS method.
Data:-cement type-OPC, sp. Gravity-3.15
Coarse Aggregate-20mm, crushed granite -,sp. Gravity 2.70
Fine aggregate-sand, sp gravity-2.65,
Max size of aggregate-20mm.
(Assume any other relevant data if necessary/ required).
8. Explain in detail the following special concretes.
 - a) Fibre reinforced concrete
 - b) Self consolidates concrete.
 - c) Polymer concrete
 - d) High density concrete.

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R-14

Code: 4G676

IV B.Tech. I Semester Supplementary Examinations November 2018

Railway Docks and Harbour Engineering

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain various types of sleeper used in railway track. 7M
- b) What are the requirements of an ideal sleeper? 7M

OR

2. A 5° curve branches off from a 3° main curve in opposite direction in BG yard . The speed limit on branch curve line is 35 kmph. Determine maximum speed permitted on main line. Deficiency in cant is 7.6 cm. 14M

UNIT-II

3. a) Explain marshalling yard with their functions. 7M
- b) Explain various types of railway stations. 7M

OR

4. Explain various types of tunnels with their advantages and disadvantages 14M

UNIT-III

5. Describe various types of harbours. 14M

OR

6. Explain the following terms:
 - a) Dredging machines
 - b) Slipways and Dry docks14M

UNIT-IV

7. What is Wharf? Explain types of its construction and its advantages. 14M

OR

8. Explain the following:
 - (a) Jetties and Dolphins
 - (b) Masonary or mass concrete walls14M

UNIT-V

9. Briefly explain the procedure for maintenance of lock gates and cassions? 14M

OR

10. What are the various types of dredger, explain in brief? 14M
