

SIXTH SEMESTER DIPLOMA EXAMINATION IN CIVIL ENGINEERING—
OCTOBER, 2014

CONCRETE TECHNOLOGY

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. What is heat of hydration ?
2. Name any four mineral admixtures using for blended cement.
3. What is bleeding in concrete ?
4. What do you meant by target strength in concrete mix design ?
5. Differentiate between high strength concrete and high performance concrete.

(5×2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* of the following. Each question carries 6 marks.

1. Write the functions of the hydrated compounds such as $C_3S, C_2S, Ca(OH)_2$.
2. Write any six tests for coarse aggregate which determine the properties required for mix design.
3. What are the factors affecting the workability of concrete ?
4. Explain the methods of measurement of workability of concrete.
5. Explain the relation between characteristics strength and targeted strength of concrete.
6. Write short note on permeability of concrete.
7. Explain fibre reinforced concrete.

(5×6=30)

PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT—I

- III What are the functions of cement ingredients? Explain. 15
OR
- IV (a) How w/c ratio influences the strength of concrete? 8
(b) Explain the action of super plasticizer for increasing the workability of concrete. 7

UNIT—II

- V (a) Explain the methods of curing. 9
(b) Explain the methods for improving the durability of concrete. 6
OR
- VI (a) What is workability? Explain the slump test. 9
(b) What is segregation and how is it prevented? 6

UNIT—III

- VII (a) List the methods of mix proportioning. 9
(b) Explain the influence of cement content and water content in mix design. 6
OR
- VIII (a) Mention the properties of the concrete related to concrete mix design. 6
(b) Write the steps involved in the mix design as per IS 10262/1982. 9

UNIT—IV

- IX (a) What are the advantages of light weight concrete? 6
(b) What are the advantages of high strength concrete? 9
OR
- X (a) What are the protective measures taken against corrosion? 9
(b) Write short notes on :
(i) sulphate attack (ii) Carbonation 6