

TED (10)–5008

Reg. No.

(REVISION—2010)

Signature

SIXTH SEMESTER DIPLOMA EXAMINATION IN CIVIL ENGINEERING—
MARCH, 2014

CONCRETE TECHNOLOGY

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

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

1. What is bulking of sand ?
2. Name any four chemical admixtures using for concrete mixes.
3. What is segregation in concrete ?
4. What is the necessity of curing ?
5. How the heat of hydration affect in mass concreting ? (5x2=10)

PART—B

II Answer *any five* questions. Each question carries 6 marks.

1. How the consistency of cement paste is tested ?
2. What is super plasticizer ? When and where super plasticizers are used ?
3. What are the methods of transporting concrete ?
4. What are the factors affecting the strength of concrete ?
5. What are the methods of mix designs ?
6. Write short note on the workability test in self compacting concrete.
7. What are the factors affecting permeability of concrete ? (5x6=30)

PART—C

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

UNIT – I

- III (a) Explain the flakiness index and elongation index. 6
- (b) Explain the role of water cement ratio in the strength of concrete. 9

OR

- | | Marks |
|---|-------|
| IV (a) Explain the test for alkali aggregate reaction in concrete. | 6 |
| (b) What are the advantages and disadvantages of super plasticizer in concrete? | 9 |

UNIT – II

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| V (a) Explain the factors affecting workability. Explain. | 9 |
| (b) Explain the factors influence the durability of concrete. | 6 |

OR

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| VI (a) Explain the compaction factor test for finding workability of concrete. | 9 |
| (b) Compare cylinder test and cube test in concrete compression. | 6 |

UNIT – III

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| VII (a) Explain the ideas behind the mix proportioning. | 6 |
| (b) Write the procedure for mix design as per IS 10262/1982. | 9 |

OR

VIII Design a concrete mix with respect to the following details.

- | | | | |
|------------------------------|---|----------------------|--|
| Grade of concrete | : | 30 Mpa | |
| Type of cement | : | OPC 43 grade | |
| Maximum nominal size of C. A | | Fraction I 20mm | |
| | | Fraction II 10mm | |
| Maximum water cement ratio | : | 0.45 | |
| Maximum cement content | : | 360mm | |
| Specific gravity of | | | |
| | | Cement : 3.15 | |
| | | Sand : 2.65, zone II | |
| | | C.A. : 2.75 | |

Assume all other datas suitably. 15

UNIT – IV

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| IX (a) Explain the self compacting concrete. | 6 |
| (b) Write short notes on under ground and under water concreting. | 9 |

OR

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|---|---|
| X (a) Explain the causes of corrosion of reinforcement. | 9 |
| (b) Differentiate between HPC and HSC. | 6 |