



Registration No:

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Total Number of Pages : 2

AR-17

B.TECH

B.TECH 5th SEMESTER EXAMINATIONS, NOV/DEC 2019
BCEPC5041 CONCRETE TECHNOLOGY
CIVIL BRANCH

Time : 3 Hours

Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark**Q.1. Answer ALL Questions**

- | | | |
|---|---|---------|
| a | Who invented Portland cement and in which year?
a) William Aspdin, 1824 b) William Aspdin, 1840s c) Joseph Aspdin, 1840s
d) Joseph Aspdin,1824 | CO4 PO1 |
| b | What is the initial setting time of cement?
a) 1 hour b) 30 minutes c) 15 minutes d) 30 hours | CO3 PO1 |
| c | What is the average particle size of cement?
a) 15 microns b) 45 microns c) 75 microns d) 100 microns | CO3 PO1 |
| d | The adequate full compaction is necessary for
a) Workability b) Compaction factor c) sieve analysis d) all the above | CO3 PO1 |
| e | Tensile test can be performed on
a) impact testing machine b) Universal Testing Machine c) Rockwell testing d) Brinell testing | CO1 PO1 |
| f | The ability of the material to resist without failure is
a) Hardness b) stiffness c) Strength c) toughness | CO1 PO1 |
| g | What is bulking of coarse aggregate
a) Less than Sand b) more than sand c) negligible d) equal to sand | CO2 PO1 |
| h | Ultra high performance concrete is (UPHC) known as
a) Active powder concrete b) reactive powder concrete c) High Strength concrete
d) Low strength concrete | CO2 PO1 |
| i | Creep is
a) Time dependent b) pressure dependent c) temperature dependent d) Strength dependent | CO1 PO1 |
| j | How many types of sulphates attack occur in concrete
a) 1 b) 2 c) 3 d) 4 | CO2 PO1 |

PART – B: (Short Answer Questions) 10X2=20 Marks**Q.2. Answer ALL questions**

- | | | |
|---|---|---------|
| a | What is meant by Chemical composition of cement? | CO1 PO1 |
| b | What is the role of gypsum in cement? | CO3 PO1 |
| c | What is meant by admixture? | CO4 PO1 |
| d | Explain the following,
i) Bulking of sand (ii) soundness of aggregate. | CO4 PO2 |
| e | What is meant by factors affecting workability? | CO2 PO1 |
| f | Define Abrams law. | CO4 PO2 |
| g | What are the factors affecting strength in concrete. | CO3 PO2 |
| h | Differentiate compressive strength and tensile strength. | CO3 PO2 |
| i | Explain the mix proportions of concrete | CO2 PO2 |
| j | Define light weight concrete | CO3 PO1 |

PART – C: (Long Answer Questions) 4X15=60 Marks**Answer ALL questions**

- | | | |
|------------|--|-----------|
| Q.3 | | |
| a | Explain the test on physical properties of cement. | 8 CO1 PO2 |
| b | Explain the different types of admixtures | 7 CO1 PO2 |

OR



c	Explain the detail of mineral and chemical Admixtures.	8	CO1 PO1
d	Explain in detail of classification of aggregates.	7	CO1 PO2
Q.4			
a	Explain the detail of testing of fresh concrete.	8	CO2 PO2
b	Explain about manufacture of concrete in quality of water.	7	CO2 PO2
OR			
c	Explain the detail of the following	8	CO2 PO2
	i) Hardened concrete tests ii) relation between compression and tensile strength test		
d	Explain the details of factors affecting strength	7	CO2 PO2
Q.5			
a	Explain briefly in details about pull out test	8	CO3 PO2
b	Explain in brief about the NDT with codal provisions.	7	CO3 PO1
OR			
c	Explain in details of i) modulus of elasticity, ii) dynamic modulus of elasticity	8	CO3 PO2
d	Explain in details of the relation between creep and time.	7	CO3 PO1
Q.6			
a	Explain the details of mix design.	8	CO5 PO1
b	Explain briefly BIS method of Mix design.	7	CO5 PO2
OR			
c	Explain about i) Fibre reinforced Concrete ii) Polymer and self compacting Concrete	8	CO4 PO1
d	Explain in details about Special Concrete	7	CO4 PO2

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