

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2019
CE3CO05 Construction Material & Techniques

Programme: B.Tech.

Branch/Specialisation: CE

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

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|-----|------|--|----------|
| Q.1 | i. | High strength concrete requires
(a) Low water cement ratio (b) High water cement ratio
(c) Any water cement ratio (d) None of these | 1 |
| | ii. | If grinding of cement is not fine the rate of hydration will be.
(a) Higher (b) Lower
(c) Not affected (d) None of these | 1 |
| | iii. | The resistance of concrete against deteriorating influences on which it is expressed is called
(a) Workability (b) Mobility
(c) Durability (d) None of these | 1 |
| | iv. | Creep is considered undesirable in which of the following
(a) Pre cast concrete (b) Cost in situ concrete
(c) Prestressed concrete (d) None of these | 1 |
| | v. | The process of Concrete Mix Design essentially consists of
(a) Two stage (b) Four stage
(c) Three stage (d) None of these | 1 |
| | vi. | Governing factor for concrete mix design
(a) Grade of concrete
(b) Types of cement
(c) Size, shape and grading of aggregate
(d) All of these | 1 |
| | vii. | Ashlar chemfered is a type of
(a) Brick masonry (b) Stone masonry
(c) Composite masonry (d) All of these | 1 |

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|-----|-------|--|----------|
| | viii. | Strength of brick masonry depends on.
(a) Quality of brick
(b) Mortar mix proportion
(c) Shape & size of masonry construction
(d) All of these | 1 |
| | ix. | Sheep foot roller are used for.
(a) Excavation (b) Hauling
(c) Compaction (d) All of these | 1 |
| | x. | Pneumatic hammers are used for.
(a) Rock curing (b) Concrete mixing
(c) Pile driving (d) All of these | 1 |
| Q.2 | i. | Define grades of concrete. | 2 |
| | ii. | Write various properties of concrete. | 3 |
| | iii. | Discus advantages & disadvantages of using concrete. | 5 |
| OR | iv. | Write notes on:
(a) High Strength Concrete (b) Ready Mix Concrete | 5 |
| Q.3 | i. | Define workability of concrete. | 2 |
| | ii. | Discuss:
(a) Slump cone test (b) Compaction factor test | 8 |
| OR | iii. | Write notes on.
(a) Micro cracking of concrete
(b) Durability of concrete | 8 |
| Q.4 | i. | Define concrete mix design and write name of various mixes. | 3 |
| | ii. | Name various classical methods of concrete mix design & explain any one in detail. | 7 |
| OR | iii. | Write notes on:
(a) Factor influencing choice of mix design.
(b) Acceptance criteria for concrete. | 7 |
| Q.5 | i. | What do you mean by dressing of stone name various stages of stone dressing? | 4 |
| | ii. | Write in detail with diagrams various bonds in brick masonry. | 6 |

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|-----|------|--|----------|
| OR | iii. | Classify stone masonry and explain with diagrams. | 6 |
| Q.6 | | Attempt any two: | |
| | i. | Classify construction equipments according to their uses. | 5 |
| | ii. | Write notes on:
(a) Equipment's for hauling (b) Drilling and blasting equipments | 5 |
| | iii. | Write in detail:
(a) Owning cost (b) Operating cost | 5 |

Marking Scheme
CE3CO05 Construction Material & Techniques

Q.1	i.	High strength concrete requires		1
		(a) Low water cement ratio		
	ii.	If grinding of cement is not fine the rate of hydration will be.		1
		(b) Lower		
	iii.	The resistance of concrete against deteriorating influences on which it is expressed is called		1
		(c) Durability		
	iv.	Creep is considered undesirable in which of the following		1
		(c) Prestressed concrete		
	v.	The process of Concrete Mix Design essentially consists of		1
		(c) Three stage		
Q.2	vi.	Governing factor for concrete mix design		1
		(d) All of these		
	vii.	Ashlar chemfered is a type of		1
		(b) Stone masonry		
	viii.	Strength of brick masonry depends on.		1
		(d) All of these		
	ix.	Sheep foot roller are used for.		1
		(c) Compaction		
	x.	Pneumatic hammers are used for.		1
		(c) Pile driving		
Q.2	i.	Define grades of concrete.		2
	ii.	Properties of concrete.		3
		Each property 1 mark	(1 mark * 3)	
	iii.	Advantages of using concrete	2.5 marks	5
		Disadvantages of using concrete	2.5 marks	
OR	iv.	Write notes on:		5
		(a) High Strength Concrete	2.5 marks	
		(b) Ready Mix Concrete	2.5 marks	
Q.3	i.	Define workability of concrete.		2
	ii.	Discuss:		8
		(a) Slump cone test	4 marks	
		(b) Compaction factor test	4 marks	

OR	iii.	Write notes on.		8
		(a) Micro cracking of concrete	4 marks	
		(b) Durability of concrete	4 marks	
Q.4	i.	Defining concrete mix design	1 mark	3
		Name of various mixes	2 marks	
	ii.	Names of classical methods of concrete mix design		7
		0.5 mark for each (0.5 mark * 4)	2 marks	
		Explanation of any one	5 marks	
OR	iii.	Write notes on:		7
		(a) Factor influencing choice of mix design.	3.5 marks	
		(b) Acceptance criteria for concrete	3.5 marks	
Q.5	i.	Definition of dressing of stone	1 mark	4
		Stages of stone dressing	3 marks	
	ii.	Bonds in brick masonry	3 marks	6
		Diagrams	3 marks	
OR	iii.	Classification of stone masonry	2 marks	6
		Explanation	2 marks	
		Diagram	2 marks	
Q.6		Attempt any two:		
	i.	Classification of construction equipment	2 marks	5
		Their uses	3 marks	
	ii.	Write notes on:		5
		(a) Equipment's for hauling	2.5 marks	
		(b) Drilling and blasting equipments	2.5 marks	
	iii.	Write in detail:		5
		(a) Owning cost	2.5 marks	
		(b) Operating cost	2.5 marks	
