

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2022
CE3CO05 Construction Materials & Techniques
 Programme: B.Tech. Branch/Specialisation: CE

Duration: 3 Hrs.**Maximum Marks: 60**

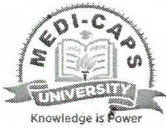
Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following is not a grade of cement? **1**
 (a) 33 Grade (b) 53 Grade (c) 63 Grade (d) 43 Grade
- ii. Which of the following is added in cement for quick setting? **1**
 (a) Gypsum (b) Aluminium sulphate
 (c) Barium chloride (d) Sodium sulphate
- iii. Which of the following is a property of fresh concrete? **1**
 (a) Strength (b) Durability (c) Creep (d) Workability
- iv. Workability is not affected by- **1**
 (a) Temperature & water content
 (b) Grading & surface texture of aggregate
 (c) Shape & size of aggregate
 (d) Colour of aggregate
- v. The purpose of mix design is to- **1**
 (a) Meet with strength (b) Full fill durability
 (c) Economy (d) All of these
- vi. What is the approx. mix proportion for M20? **1**
 (a) 1:3:6 (b) 1:1.5:3 (c) 1:2:4 (d) 1:1:2
- vii. Mortar is mixture of- **1**
 (a) Cement + Coarse aggregate + fine aggregates & water
 (b) Lime+ Coarse aggregate + Water
 (c) Cement + Sand + Water
 (d) Cement +Water
- viii. Alternate courses of headers and stretchers are provided in- **1**
 (a) English bond (b) Stretcher bond
 (c) Dutch bond (d) Header bond

P.T.O.

- ix. Drop hammers are used for- **1**
 (a) Excavation work (b) Levelling work
 (c) Pilling work (d) Drilling work
- x. The main aim of compaction is to- **1**
 (a) Reduce or prevent settlement (b) Increase strength
 (c) Control volume change (d) All of these
- Q.2 i. Explain common defects in brick masonry. **4**
 ii. Explain IS classification of bricks. **6**
 OR iii. Explain types of scaffolding. **6**
- Q.3 i. What do you mean by soil stability? **4**
 ii. Explain types of foundation with diagram. **6**
 OR iii. Write a detailed note on thermal insulation of roofs. **6**
- Q.4 i. Define concrete and its ingredients. **4**
 ii. What are the factors affecting workability of concrete? Discuss in detail. **6**
 OR iii. Describe compressive strength, tensile strength, and flexural strength of concrete. **6**
- Q.5 i. What is the principle of concrete mix design? **4**
 ii. Write down the factors which affect concrete mix design. **6**
 OR iii. Explain IS method for concrete mix design **6**
- Q.6 Attempt any two: **5**
 i. Explain Light Weight concrete **5**
 ii. Explain polymer modified concrete. **5**
 iii. Write a short note on ready mix concrete **5**

Scheme of Marking

	<p style="text-align: center;">Faculty of Engineering End Sem (Odd) Examination Dec-2022 CE3CO05 Construction Materials & Techniques</p>	
	Programme: B.Tech.	Branch/Specialisation:

Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.

Q.1	i)	Which of the following is not a grade of cement C) 63 Grade	1
	ii)	Which of the following is added in cement for quick setting A) Gypsum	1
	iii)	Which of the following is a property of fresh concrete? D) Workability	1
	iv)	Workability is not affected by D) Colour of aggregate	1
	v)	The purpose of mix design is to D) All of the above	1
	vi)	What is the approx. mix proportion for M20? B) 1:1.5:3	1
	vii)	Mortar is mixture of C) Cement + Sand + Water	1
	viii)	Alternate courses of headers and stretchers are provided in A) English bond	1
	ix)	Drop hammers are used for C) Pilling work	1
	x)	The main aim of compaction is to D) All of the above	1
Q.2	i.	Explain common defects in brick masonry. For each correct defect give 1 marks	4
	ii.	Explain IS classification of bricks. For each correct answer give 1.5 marks	6
	OR iii.	Explain types of scaffolding. For each correct answer give 1.5 marks	6

Q.3	i.	What do you mean by soil stability? For correct definition give full marks	4
	ii.	Explain types of foundation with diagram. For each correct type give 1 marks	6
OR	iii.	Write a detailed note on thermal insulation of roofs. For correct explanation give full marks	6
Q.4	i.	Define concrete and its ingredients. For correct definition give 2 marks For each correct ingredient give 0.5 mark	4
	ii.	What are the factors affecting workability of concrete? Discuss in detail. For each correct factor give 1 mark	6
OR	iii.	Describe compressive strength, tensile strength and flexural strength of concrete. For each correct definition give 2 marks	6
Q.5	i.	What is the principle of concrete mix design? For correct answer give full marks	4
	ii.	Write down the factors which affect concrete mix design. For each correct factor give 1.5 mark	6
	OR iii.	Explain IS method for concrete mix design For each correct step give 1 mark	6
Q.6		Attempt any two:	
	i.	Explain Light Weight concrete For correct answer give full marks	5
	ii.	Explain polymer modified concrete. For correct answer give full marks	5
	iii.	Write a short note on ready mix concrete For correct answer give full marks	5
