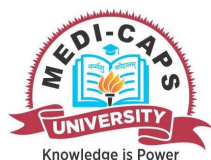


Enrollment No.....



**Faculty of Engineering**  
**End Sem (Even) Examination May-2022**  
**CE3EL04 Building Maintenance & Repairs**

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 The main reason for cracks in masonry joints is: **1**  
 (a) Moisture (b) Sulphate (c) Magnesium (d) Sodium
- ii A building is new, what type of maintenance is required to keep it up to date: **1**  
 (a) Corrective maintenance (b) Annual maintenance  
 (c) Special maintenance (d) Curative maintenance
- iii The effectiveness of a corrosion inhibitor depends on: **1**  
 (a) Fluid Composition (b) Quantity of Water  
 (c) Flow Regime (d) All of these
- iv Among these which is not a type of corrosion inhibitor? **1**  
 (a) Anodic inhibitors  
 (b) Cathodic inhibitors  
 (c) Volatile corrosion inhibitors  
 (d) Influential inhibitors
- v Among these which is a lightweight concrete? **1**  
 (a) Aerated Concrete  
 (b) No-Fines concrete  
 (c) Light weight aggregate concrete  
 (d) All of these
- vi Among these which is not a Polymer-Concrete Materials- **1**  
 (a) PPCC (b) PIC (c) PC (d) PCC
- vii Which is a common method for protecting concrete from weathering?  
 (a) Application of oils & paints  
 (b) Application of varnishes  
 (c) Application of chemical solutions  
 (d) All of these

- viii How many types of cracks can occur in a building? **1**  
 (a) 3 (b) 4 (c) 2 (d) 6
- ix Which is a step of demolition process? **1**  
 (a) Surveying (b) Removal of hazardous material  
 (c) Preparation of plan (d) All of these
- x Which is not a method of demolition? **1**  
 (a) Non-explosive demolition (b) Explosive demolition  
 (c) Mechanical demolition (d) None of these
- Q.2 i. Define durability. **2**  
 ii. What do you mean by corrosion inhibitors? Explain its types in detail. **8**
- OR iii. Explain effects of climate on building structure in detail. **8**
- Q.3 i. Define rehabilitation. **2**  
 ii. What are facets of maintenance? **3**  
 iii. Explain assessment procedure for evaluating for damaged structures. **5**
- OR iv. Describe causes of deterioration. **5**
- Q.4 i. Explain light weight concrete in detail. **4**  
 ii. Explain polymer concrete and ferro cement concrete. **6**
- OR iii. Explain Sulphur Infiltrated concrete and Expansive cement. **6**
- Q.5 i. Explain common repair techniques for crack repair. **4**  
 ii. Explain repair techniques for a structure having marine exposure. **6**
- OR iii. Explain repair techniques for weathering wear and chemical disruption. **6**
- Q.6 i. Write down definition of demolition. **2**  
 ii. Explain various steps before demolition in detail. **8**  
 iii. Explain various methods of demolition. **8**

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P.T.O.

## Marking Scheme

### CE3EL04 Building Maintenance & Repairs

Q.1	i	The main reason for cracks in masonry joints is:	1
		(b) Sulphate	
	ii	A building is new, what type of maintenance is required to keep it up to date:	1
		(b) Annual maintenance	
	iii	The effectiveness of a corrosion inhibitor depends on:	1
		(d) All of these	
	iv	Among these which is not a type of corrosion inhabitator?	1
		((d) Influential inhibitors	
	v	Among these which is a lightweight concrete?	1
		(d) All of these	
	vi	Among these which is not a Polymer-Concrete Materials-	1
		(d) PCC	
	vii	Which is a common method for protecting concrete from weathering?	
		(d) All of these	
	viii	How many types of cracks can occur in a building?	1
		(c) 2	
	ix	Which is a step of demolition process?	1
		(d) All of these	
	x	Which is not a method of demolition?	1
		(d) None of these	
Q.2	i.	For proper definition	2 Marks
	ii.	Correct definition of corrosion inhabitants	2 Marks
		For each type (min 3 type)	1 Mark for each (1 Mark*3)
		For description each type (min 3 type)	1 Mark for each (1 Mark*3)
OR	iii.	For correct effects	1 Mark each (1 Mark*8)
Q.3	i	For proper definition	2 Marks
	ii	For correct points	1 Mark each (1 Mark*3)
	iii	Flow diagram	1 Mark
		Explanation of Flow diagram	4 Marks
OR	iv	For correct effects	1 Mark each (1 Mark*5)

Q.4	i.	Definition of light weight concrete	1 Mark	<b>4</b>
		Correct type (3 points)	1 Marks each (1 Mark*3)	
	ii.	Correct explanation of polymer concrete	3 Marks	<b>6</b>
		Correct explanation of ferro cement concrete.	3 Marks	
OR	iii	Correct explanation of Sulphur Infiltrated concrete	3 Marks	<b>6</b>
		Correct explanation of Expansive cement.	3 Marks	
Q.5	i.	For correct explanation	4 Marks	<b>4</b>
	ii.	For correct explanation	6 Marks.	
OR	iii	For weathering wear correct explanation	3 Marks	<b>6</b>
		Chemical disruption correct explanation	3 Marks	
Q.6	i.	For proper definition	2 Marks	<b>2</b>
	ii.	For each point	2 Mark each (2 Mark*4)	
	iii.	For each method	2 Mark each (2 Mark*4)	

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