Total No. of Questions: 6 *Total No. of Printed Pages:2*

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 inhabitator? **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 inhabitators? 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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Marking Scheme

CE3EL04 Building Maintenance & Repairs

Q.1	i	The main reason for cracks in masonry joints is: (b) Sulphate		**1**
	ii	A building is new, what type of maintenance is required to keep it up to date: (b) Annual maintenance		**1**
	iii	The effectiveness of a corrosion inhibitor depends on: (d) All of these		**1**
	iv	Among these which is not a type of corrosion inhabitator? ((d) Influential inhibitors		**1**
	v	Among these which is a lightweight concrete? (d) All of these		**1**
	vi	Among these which is not a Polymer-Concrete Materials- (d) PCC		**1**
	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? (c) 2		**1**
	ix	Which is a step of demolition process? (d) All of these		**1**
	x	Which is not a method of demolition? (d) None of these		**1**
Q.2	i.	For proper definition	2 Marks	**2**
	ii.	Correct definition of corrosion inhabitators	2 Marks	**8**
		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)	**8**
Q.3	i	For proper definition	2 Marks	**2**
	ii	For correct points	1 Mark each (1 Mark*3)	**3**
	iii	Flow diagram	1 Mark	**5**
		Explanation of Flow diagram	4 Marks	
OR	iv	For correct effects	1 Mark each (1 Mark*5)	**5**
Q.4	i.	Definition of light weight concrete Correct type (3 points)	1 Mark 1 Marks each (1 Mark*3)	**4**
	ii.	Correct explanation of polymer concrete Correct explanation of ferro cement concrete.	3 Marks 3 Marks	**6**
OR	iii	Correct explanation of Sulphur Infiltrated concrete Correct explanation of Expansive cement.	3 Marks 3 Marks	**6**
Q.5	i.	For correct explanation	4 Marks	**4**
	ii.	For correct explanation	6 Marks.	**6**
OR	iii	For weathering wear correct explanation Chemical disruption correct explanation	3 Marks 3 Marks	**6**
Q.6	i.	For proper definition	2 Marks	**2**
	ii.	For each point	2 Mark each (2 Mark*4)	**8**
	iii.	For each method	2 Mark each (2 Mark*4)	**8**

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