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GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, May – 2021

(Eighth Semester)

**BCEPE8013 – REPAIR AND REHABILITATION OF STRUCTURES**

(Civil Engineering)

Time: 2 hrs

Maximum: 50 Marks

**Answer ALL Questions****The figures in the right hand margin indicate marks.****PART – A: (Multiple Choice Questions)****(1 x 10 = 10 Marks)****Q.1. Answer ALL questions**

[CO#] [PO#]

- a. Rehabilitation of structures may be required due to several reasons. Choose the correct reason. [CO 1] [PO1]
- (i) Environmental effects (ii) Tensile effects  
(iii) Compressive effects (iv) Range effects
- b. The structural concrete slab panels can be repaired by \_\_\_\_\_ [CO 1] [PO1]
- (i) Internal bonding (ii) External bonding  
(iii) Stress bonding (iv) Layered bonding
- c. Which type of inspection is more intensive involving examination of structural elements? [CO 2] [PO2]
- (i) Minor inspection (ii) General inspection  
(iii) Major inspection (iv) Reverse inspection
- d. In the case of dormant cracks wider than about 1m, it is more economical to use \_\_\_\_\_ [CO 4] [PO4]
- (i) Epoxy resin (ii) Grouting  
(iii) Tensioning (iv) Ranging
- e. How many types of damages are present in classification of damage? [CO 3] [PO3]
- (i) 1 (ii) 2  
(iii) 3 (iv) 4
- f. One of the testing equipment's used for inspection is? [CO4] [PO4]
- (i) Strain gauges (ii) Measuring jar  
(iii) Test tubes (iv) None of the mentioned
- g. In method 3 the restoration is done by addition of ----- [CO 3] [PO3]
- (i) water proof jacket (ii) Metal sleeve jacket  
(iii) Aluminium jacket (iv) steel jacket
- h. In restoration of strength by adding external R.C the damage concrete is first repaired by applying ----- [CO5] [PO 5]
- (i) Preload (ii) Over load  
(iii) Tensile load (iv) Compressive load
- i. In some cases of repair of girders damaged by collision, the damage is severe what is used? [CO 1] [PO1]
- (i) Trusses And Bars (ii) Links And Dowels  
(iii) Lace And Anchores (iv) Struts And Pins
- j. To control corrosion , concrete with-----is used [CO 2] [PO 2]
- (i) More coarse aggregate (ii) low thermal co efficient  
(iii) more cement (iv) low permeability

**PART – B: (Short Answer Questions)****(2 x 5 = 10 Marks)**Q.2. Answer ALL questions

	[CO#]	[PO#]
a. Distinguish between repair and rehabilitation?	CO1	PO 1
b. What are the types of cracks?	CO5	PO 1
c. What are the applications of polymer cement concrete?	CO2	PO 1
d. Give the categories of demolition techniques.	CO4	PO 1
e. How clamps are used to overcome low member strength?	CO1	PO 1

**PART – C: (Long Answer Questions)****(6 x 5 = 30 Marks)**Answer ALL questions

	Marks	[CO#]	[PO#]
3. Describe the steps in the assessment procedure for evaluate damages in a structure. The following steps may be necessary	(6)	CO1	PO1
4. Discuss about the inspection to be carried out during and after the construction of structure .	(6)	CO1	PO1
5. Explain in detail about expansive cement.	(6)	CO4	PO1
6. Explain in detail about quality assurance.	(6)	CO2	PO1
7. Describe the various strengthening techniques to overcome low member strength	(6)	CO3	PO1
8. Explain in details about chemical disruption on concrete	(6)	CO5	PO1
9. Briefly explain about the vaccum concrete.	(6)	CO4	PO1
10. Briefly explain about the Shoring.	(6)	CO4	PO1

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