Reg. No. : | | | | | | | | | | |

Question Paper Code: 49105

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Civil Engineering

14UCE905- REPAIR AND REHABILITATION OF STRUCTURES

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

(Answer all Questions)

1. The main aim of maintaining the structures is to. CO1- R

   (a) Stabilize the structures

   (b) Improve it's appearance

   (c) utilize the funds provided

   (d) utilize service of in charge maintenance

2. The sulphate attack can be controlled by CO1- R

   (a) Air entrainment (b) High alumina cement (c) Pozzolana (d) All the above

3. For preparing mortar _____ is used along with cement and water CO2-U

   (a) Aggregates (b) Bricks (c**)**Sand (d) Steel

4. No cracks are visible on the exposed surface of a verandah slab,but it leaks sufficiently during rains ,The reason is CO2- R

   (a)Less thickness of slab (b)Under reinforcement slab

   (c)Porosity of slab material (d)Excessive thickness of slab

5. Concrete produced by removing excess water is known as _____ CO3- R

   (a) vacuum concrete (b) self compacting concrete

   (c) FRC (d) dry pack

6. Cracks may be considered as probalamatic, if they are CO3- U

(a)Aesthetically unacceptable (b) Structure non water tight

(c) Affect the durability (d**)** All the above

7. Shotcrete concrete contains a well grained aggregates of CO4-U

(a) 10mm or less in size (b) 20mm or less in size

(c) 10mm or more in size (d) None of the above

8. The process of corrosion will be started when the PH value is CO4- U

(a) above 13 (b) below 7 (c) below 13 (d) above 7

9. Suitable time to take up repair is _____ CO5- R

(a**)** winter (b) autumn (c) spring (d) summer

10. Placing new permanent structural element by supporting and removing existing structural element is _____ CO5- U

(a) Jackets (b) Underpining (c) Collars (d) Brackets

PART – B (5 x 2= 10Marks)

11. Distinguish Repair and Rehabilitation. CO1- R

12. What are the effects of cover ofthickness in concrete? CO2- R

13. List out the type of polymer concrete composites? CO3- R

14. What do you mean by NDT? CO4- R

15. Name any four demolition equipment. CO5 -R

PART – C (5 x 16= 80Marks)

16. (a) Describe the steps in the assessment procedure for evaluate damages in a structure. CO1- App (16)

Or

(b) Brief about causes, types and prevention of cracks. CO1-App (16)

17. (a) Write the factors influencing corrosion of reinforcement. Explain the damage in RC structures due to corrosion in reinforcement CO2 -Ana (16)

Or

(b) Explain in detail about quality assurance of concrete. CO2 -U (16)

18.	(a)	Briefly explain about polymer concrete and its types.	CO3- Ana	(16)
		Or		
	(b)	Explain in detailVacuum concrete.	CO3 -Ana	(16)
19.	(a)	With the aid of neat sketches, explain any two Non destructive testing techniques.	CO4- U	(16)
		Or		
	(b)	What do you understand about Corrosion inhibitors.	CO4 -U	(16)
20.	(a)	Describe in detail about the various demolition techniques.	CO5- U	(16)
		Or		
	(b)	Illustrate the term demolition. Also discuss the techniques available for demolition of a building structure, explain any one in detail.	CO5- U	(16)