

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Winter Examination – 2023

Course: B. Tech.

Branch: Civil Engineering

Semester: VIII

Subject Code & Name: BTCVSS801D & Maintenance & Repair of concrete Structure

Max Marks: 60

Date:15-01-24

Duration: 3 Hr.

Instructions to the Students:

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q. 1 Solve Any Two of the following.		12
A) What are the reasons for failure of repairs?	CO1	6
B) Enlist different types of corrosions in concrete structures? Explain Carbonation induced corrosion in detail.	CO1	6
C) What is the necessity of corrosion management?	CO1	6
Q.2 Solve Any Two of the following.		12
A) Explain in brief Corrosion induced cracking and spalling in building.	CO2	6
B) State and explain different sources of sulphate which can attack on strength and durability of building structure.	CO2	6
C) What is DEF? Explain the mechanism of DEF induced cracking.	CO2	6
Q. 3 Solve Any Two of the following.		12
A) Explain in brief frost attack. Suggest suitable measures to reduce effect of frost attack.	CO3	6
B) Explain in detail with the help of suitable sketches, crack patterns developed due to ASR.	CO3	6
C) What are the different causes of deterioration of cementitious system?	CO3	6
Q.4 Solve Any Two of the following.		12
A) Explain the different steps of assessment of condition of RCC structures.	CO4	6
B) What is ground penetrating radar system? How it locate the delaminated concrete?	CO4	6
C) How the concrete surface repair is achieved?	CO4	6
Q. 5 Solve Any Two of the following.		12
A) State the different questions needs to be addressed during repair analysis?	CO5	6

- | | | |
|--|-----|---|
| B) Explain the process of strengthening of slab and beams. | CO5 | 6 |
| C) State the different methods of strengthening of column and explain any one in detail. | CO5 | 6 |

***** End *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Winter Examination – 2023

Course: B. Tech.

Branch: Civil Engineering

Semester: VIII

Subject Code & Name: Environmental Remediation of Contaminated Site (BTCESS802B)

Max Marks: 60

Date: 17/01/2024

Duration: 3 Hr.

Instructions to the Students:

- 1. All the questions are compulsory.*
- 2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.*
- 3. Use of non-programmable scientific calculators is allowed.*
- 4. Assume suitable data wherever necessary and mention it clearly.*

	(Level/CO)	Marks
Q. 1 Solve Any Two of the following.		12
A) What are the different parameters need to check for site contamination?	CO1	6
B) A solid contaminant is dissolved in an aquifer. The aquifer has a porosity of 0.4. The dissolved volume of contaminant in GW is 500 L. The pumping out of an extraction well is performed at a flow rate of 2 L/day. Calculate the remediation time required for the contaminated site.	CO1	6
C) What are the rules and regulations should follow during the handling, transporting of hazardous waste?	CO1	6
Q.2 Solve Any Two of the following.		12
A) What do you mean by toxicity assessment?	CO2	6
B) Explain shortly waste management hierarchy.	CO2	6
C) Write down problems of unscientific disposal of hazardous and other waste.	CO1	6
Q. 3 Solve Any Two of the following.		12
A) What do you mean by leachate? Explain TCLP Test	CO3	6
B) Describe any case study of environmental remediation for contaminated site.	CO3	6
C) What are the important factors considered for selection of solidification/stabilization treatment?	CO3	6
Q.4 Solve Any Two of the following.		12
A) Explain the landfill procedure for hazardous waste.	CO4	6
B) Explain the Reductive processes?	CO4	6
C) Explain Soil Vapor Extraction process.	CO4	6

Q. 5 Solve Any Two of the following.

12

- | | | |
|---|------------|----------|
| A) Explain bioremediation process. Write down advantages and limitations of bioremediation process. | CO3 | 6 |
| B) Explain Incineration. What is the application of incineration? | CO4 | 6 |
| C) Explain briefly: Soil washing treatment with applications and limitations. | CO4 | 6 |

***** End *****