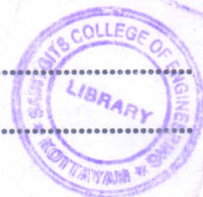


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Reg. No.....

Name.....



**B.TECH. DEGREE EXAMINATION, MAY 2015**

**First and Second Semester**

EN 010 103—ENGINEERING CHEMISTRY AND ENVIRONMENTAL STUDIES

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

{Common for all branches}

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What is reference electrode ? Give an example.
2. What is Sheradizing ?
3. Write briefly on any *one* heavy metal poisoning.
4. Write shortly on the causes and effects of acid rain.
5. Define glass transition temperature.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain single electrode potential.
7. Explain anodization of aluminium.
8. Write a note on ozone layer depletion with the relevant chemical equations.
9. Explain the reverse osmosis for the desalination of water.
10. Explain the preparation, properties and uses of silicone rubber and NBR.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. (a) Explain the different types of reversible electrodes.

Or

**Turn over**



- (b) (i) What are secondary cells? Explain the construction and working of a lead acid accumulator.  
(ii) Explain overvoltage.

(8 + 4 = 12 marks)

12. (a) (i) Explain differential aeration corrosion and stress corrosion.  
(ii) Give a detailed account on the modification of the environment for corrosion control.

(6 + 6 = 12 marks)

*Or*

- (b) (i) Write in detail on the sacrificial anodic protection and impressed current cathodic protection.  
(ii) Write a note on chemical corrosion.

(7 + 5 = 12 marks)

13. (a) (i) Write a note on vulcanization. What are its advantages?  
(ii) Describe the properties, uses and manufacturing method of glass reinforced plastics.

(6 + 6 = 12 marks)

*Or*

- (b) Describe the different moulding techniques used for plastics.

14. (a) (i) Describe the sources and effects of various types of gaseous and particulate pollutants.  
(ii) Write a note on thermal pollution.

(8 + 4 = 12 marks)

*Or*

- (b) (i) Define BOD and COD. Explain their experimental determinations.  
(ii) Explain the control of water pollution.

(8 + 4 = 12 marks)

15. (a) (i) Write a detailed account of the various renewable sources of energy.  
(ii) Write a note on global warming and the importance of biodiversity.

(6 + 6 = 12 marks)

*Or*

- (b) (i) Describe the causes and consequences of acid rain and photochemical smog.  
(ii) Write a note on wet land depletion and E-waste disposal.

(6 + 6 = 12 marks)

[5 × 12 = 60 marks]

