

AUGUST 2006

2006 MAHATMA GANDHI UNIVERSITY
B.TECH DEGREE EXAMINATIONS
II SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING
ENGINEERING CHEMISTRY

TIME : 3 HOUR
MARK : 100

ANSWER ALL QUESTIONS

MARKS. (10 X 4 = 40)

1. What are reversible and irreversible cells? Give examples.
2. Write a note on concentration cells.
3. What is ebonite? How is it obtained?
4. Write a detailed account of condensation polymerization.
5. Explain Dry corrosion.
6. How is corrosion prevented by cathodic protection?
7. What are boiler scales? Describe the harmful effects of boiler scale formation.
8. Explain the term "reverse osmosis".
9. Why is a small quantity of ethyl bromide added to petrol along with antiknocking agent, TEL?
10. Write a short note on "Solid lubricants".

MARKS. (5 X 12 = 60)

11. (a) Define electromotive force. How is it measured by potentiometric method? What will be the e.m.f. of the cell at 25°C. $Zn(s) | Zn^{2+}(0.001M) || Fe^{2+}(0.005M) | Fe(s)$ given that $E^0(Zn^{2+}, Zn) = -0.76 V$ and $E^0(Fe^{2+}, Fe) = -0.44 V$.

Or

- (b) (i) Explain different applications of electrochemical series.
(ii) Write a short note on fuel cells.

12. (a) Give the preparation, structure and uses of Terylene and PVC. Differentiate between thermoplastic and thermosetting resins. Give two examples each.

Or

- (b) (i) Explain the important moulding techniques for fabrication of plastics.
(ii) Explain the preparation, properties and industrial uses of Buna rubbers.

13. (a) Discuss in detail about the various factors which affect corrosion.

Or

- (b) What are organic and inorganic coatings?

14. (a) What are the external and internal treatment required for prevention of scale formation in boilers? Explain the disadvantages of lime soda process for treatment of water.

Or

- (b) Define desalination. Describe electrodialysis method of desalination with a neat diagram.

15. (a) What are various causes of air-pollution and how can it be controlled?

Or

- (b) What are the important properties of lubricants? Write a short note on synthetic lubricants.