



C16-EE/CHPP-104

6037

BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2017

DEEE—FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND  
ENVIRONMENTAL STUDIES

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State Pauli's principle with example.
2. State three properties of ionic compound.
3. Define the following :
  - (a) Mole
  - (b) Normality
  - (c) Solution
4. What are buffer solutions? Mention two uses.
5. Define the following :
  - (a) Electrode potential
  - (b) EMF of the cell
6. What are the causes of hardness of water?

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7. Explain addition polymerization with an example.
8. Mention the composition and uses of (a) water gas (b) producer gas.
9. Write any three causes of water pollution.
10. Define the following terms :
- (a) Pollutant
- (b) Biodiversity
- (c) Ecosystem

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (a) Write the postulates of Bohr's atomic theory with two limitations. 7
- (b) Calculate the oxidation number of Mn in  $\text{KMnO}_4$  and Cr in  $\text{K}_2\text{Cr}_2\text{O}_7$ . 3
12. (a) Explain the Bronsted-Lowry theory of acids and bases with examples. 5
- (b) Define molarity. Calculate the molarity of a solution if 5.3 gms of  $\text{Na}_2\text{CO}_3$  is present in 250 ml of solution. 5
13. (a) Write the composition and uses of German silver and brass. 4
- (b) State the differences between metals and non-metals. 6
14. (a) Explain Faraday's laws of electrolysis. 5
- (b) What is electro chemical series? Mention its significance. 5
15. (a) Explain the formation of a composition cell and stress cell. 5
- (b) State and explain the five factors which influence the rate of corrosion. 5

16. (a) Write the <sup>\*</sup> essential qualities of drinking water. 4  
(b) Describe the permutit process of softening of hard water. 6
17. (a) Mention the preparation and uses of (i) Buna-S and (ii) Neoprene rubber. 5  
(b) Write the differences between thermo-plastics and thermo-setting plastics. 5
18. (a) Define 'air pollution'. Explain the causes of air pollution. 7  
(b) Define the following : 3  
(i) Producers  
(ii) Consumers  
(iii) Decomposers

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