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C16-EC/CHPC/PET-104

6030

BOARD DIPLOMA EXAMINATION, (C-16)  
JUNE—2019  
DECE—FIRST YEAR EXAMINATION ENGINEERING  
CHEMISTRY AND ENVIRONMENTAL

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. Draw the shapes of sand and orbital?
2. Define Hund's rule. Give one example.
3. Define terms saturated, unsaturated and supersaturated solutions.
4. Define Buffer solution. Write any two applications.
5. Define strong electrolyte and weak electrolyte with one example for each.
6. Write the essential qualities for drinking water.
7. Explain condensation polymerization with an example.
8. Write composition of coal gas, water gas and natural gas.
9. Define sink, receptor and pollutant.
10. Write any three effects deforestation.

**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 are the content but not the length of the answer.

11. (a) Explain principal quantum number and azimuthal quantum number. 5  
(b) Define ionic bond. Explain with one example. 5
12. (a) Define molarity calculate the weight of  $\text{Na}_2\text{CO}_3$  present in 250 ml of 0.2 M solution of  $\text{Na}_2\text{CO}_3$ . (GMW of  $\text{Na}_2\text{CO}_3 = 106$ ). 5  
(b) Define Lewis theory of acids and bases and give three limitations. 5
13. (a) Write any six differences between metals and non-metals. 6  
(b) Write composition and uses of (i) brass and (ii) German silver. 4
14. (a) Define Fraday's first law and second law with equations. 5  
(b) Explain the construction and working of Galvanic cell. 5
15. (a) Define corrosion. Write any four factors which influence the rate of corossion? 5  
(b) Explain by sacrificial anode method to control corosion with neat diagram. 5
16. (a) Write any four disadvantages of hard water using in industries. 4  
(b) Explain the purmutit method for softening of hardwater with diagram. 6
17. (a) Write any five differences between thermoplastics and thermosetting plastics. 5  
(b) Write any five properties of plastics. 5
18. (a) Explain any three methods of control of water pollution. 6  
(b) Write short note on Greenhouse effect? 4

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