



C14-A/AA/AEI/BM/CHST/C/CM/
EC/EE/CHPP/CHPC/CHOT/PET/M/

RAC/MET/MNG/IT/TT - **104**

4004

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL-2018

FIRST YEAR- (COMMON) 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. Define oxidation and reduction. Give an example for each.
2. Write any three differences between an orbit and an orbital.
3. Define saturated, unsaturated and supersaturated solutions.
4. Calculate the P^H of 0.01M HCl solution.
5. Write any three differences between electrolytic cell and galvanic cell.
6. Define the degree of hardness. How is it expressed?
7. Write any three advantages of plastics over traditional materials.
8. Classify the fuels based on their physical state. Give an example for each.

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9. Write a short note on acid rain.
10. Define ^{*}biodiversity. List out any two factors that threaten biodiversity.

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) What is ionic bond? Explain the formation of sodium chloride. 6
(b) Define Aufbau's principle. Give an example. 4
12. (a) Define molarity. Calculate the molarity of solution containing 4.9 gm of sulphuric acid dissolved in 1 lit of the solution. 5
(b) Explain Arrhenius concept of acids and bases. State any two limitations of it. 5
13. (a) State any six differences between metal and non-metal. 6
(b) Give the composition and uses of the following:
(i) German silver (ii) Nichrome 4
14. (a) What is electrolysis? Explain the phenomenon of electrolysis with molten NaCl. 6
(b) Define e.m.f. The standard reduction potentials of copper and silver are 0.34 V and 0.80 V respectively. Find the standard e.m.f. of the cell $\text{Cu}/\text{Cu}^{2+} (1\text{M})//\text{Ag}^+(1\text{M})/\text{Ag}$. 4
15. (a) Define corrosion. State any four factors that influence the rate of corrosion. 6
(b) Explain the impressed voltage method. 4

- 16.** (a) Explain ion-exchange process of softening of hard water. 7
(b) Write any three essential qualities of drinking water. 3
- 17.** (a) Define and explain addition polymerisation and condensation polymerisation with an example for each. 8
(b) Define elastomers. Give any two examples. 2
- 18.** (a) Define air pollution. Explain any four methods of control of air pollution. 6
(b) Explain any four effects of deforestation. 4

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