



C16-A/AA/BM/CHST/AEI/MET/

MNG/TT/IT—104

6004

BOARD DIPLOMA EXAMINATION, (C-16)

SEPTEMBER/OCTOBER - 2020

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. Write the electronic configuration of chromium ($Z = 24$) and copper ($Z = 29$).
2. Write any three limitations of Bohr's atomic theory.
3. Calculate the number of moles present in 10 grams of NaOH.
4. Write any three applications of buffer solutions.
5. Write the differences between electrolytic cell and galvanic cell.

- * 6. Define reverse osmosis and write its uses.
7. Define elastomers and give two examples.
8. Classify the fuels on the basis of physical state with examples.
9. Write a short note on ozone depletion.
10. Explain the primary and secondary pollutants.

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) Define ionic bond and explain its formation with example. 6
 (b) Write the postulates of electronic theory of valency. 4
12. (a) Explain the Bronsted-Lowry theory of acids and bases with examples. 5
 (b) Explain the classification of solutions on the basis of physical state. 5
13. (a) Explain the process of electrolytic refining of metals. 4
 (b) Define and explain (i) calcination, (ii) roasting and (iii) smelting with examples. 6

- * 14. (a) Write the postulates of Arrhenius theory of electrolytic dissociation. 6
- (b) How many electrons will flow when a current of 1.5 amperes is passed through a conductor for 25 minutes? 4
15. (a) Define corrosion and name the factors which influence the rate of corrosion. 5
- (b) Explain the various types of protective coatings to prevent corrosion. 5
16. (a) Explain the softening of hard water by using ion-exchange method. 7
- (b) Explain the types of impurities present in water. 3
17. (a) Write the characteristics of plastics. 4
- (b) Explain the preparation and uses of plastics namely PVC, Teflon, polystyrene. 6
18. (a) Write short notes on : 4
- (i) Greenhouse effect
- (ii) Acid rain
- (b) Explain producers, consumers and decomposers with examples. 6
