

SECOND SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/  
TECHNOLOGY—MARCH, 2014

APPLIED SCIENCE–II (Chemistry)  
(Common except for DCP and CABM)

[Time : 1½ hours]

(Maximum marks : 50)

## PART—A

(Maximum marks : 4)

Marks

- I Answer the following questions in one or two sentences. Each question carries 2 marks.
- (a) What is corrosion? Write two examples.
- (b) Write a note on metal matrix composite. (2×2=4)

## PART—B

(Maximum marks : 16)

(Answer any two full questions. Each question carries 8 marks)

- II (a) Write the differences between electroplating and anodizing. 4
- (b) Mention any one use of the following : 4
- (i) Silica (iii) Ferric Chloride
- (ii) Charcoal (iv) Nickel
- III (a) Numbers of organic compounds are very large compared to inorganic compounds. Account for this statement. 4
- (b) Describe the impact of four pollutant on the environment. 4
- IV (a) What is propellant? Explain different types of propellants with example. 4
- (b) Explain the type of corrosion takes place when a Zinc rod is partially dipped in potassium Nitrate solution. 4
- (2×8=16)

## PART—C

(Maximum marks : 30)

(Answer one full question from each unit. Each question carries 15 marks.)

## UNIT—I

- V (a) Explain the difference in the phenomena takes place when :
- (i) anhydrous Calcium Chloride is placed in water and
- (ii) Silica Gel is placed in water 4

- (b) Write the reactions with reasons
- (i) Iron rod is placed in copper sulphate solution and  
(ii) Zinc is placed in copper sulphate solution. 4
- (c) What is Galvanisation? Explain the mechanism of Rusting of Iron. 4
- (d) What are the advantages of Nicad Cell over other cells? 3

OR

- VI (a) Write the differences between galvanic cell and electrolytic cell. 4
- (b) Explain the effect of temperature and pressure on adsorption. 4
- (c) (i) Cathodic protection is also called sacrificial protection. Comment on the statement.  
(ii) Which is most preferred :  
(1) coating of zinc over iron or  
(2) coating of Tin over Iron. 4
- (d) Explain the mechanism of Hydrogen-Oxygen fuel cell. 3

UNIT—II

- VII (a) Write one example each for the following :  
(i) Heterocyclic compound (iii) Alicyclic compound  
(ii) Homocyclic compound (iv) Aromatic compound 4
- (b) (i) Describe a method to increase the strength of Natural Rubber.  
(ii) Mention the advantages of synthetic rubber over natural rubber. 4
- (c) Write four relevance of green chemistry. 4
- (d) Mention any three qualities of a good fuel. 3

OR

- VIII (a) What do you mean by Green house effect? What are its consequences? How will you reduce it? 4
- (b) What are the main components present in the following substance?  
(i) LPG (iii) Producer Gas  
(ii) Natural Gas (iv) Water Gas 4
- (c) Write any four differences between addition and condensation polymerization. 4
- (d) Draw the isomers of the following molecular formula :  
(i)  $C_2H_6O$  (ii)  $C_4H_{10}$  3