TED (10)–1016 B

(REVISION—2010)

Reg. No. .....

Signature .....

SECOND SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—OCTOBER, 2012

APPLIED SCIENCE—II

Chemistry

(Common Except DCP & CABM)

[*Time* : 1½ hours

(Maximum marks : 50)

Marks

PART—A

(Answer *all* questions in one or two sentences. Each question carries 2 marks.)

I (a) Define the term Vulcanisation. 2

(b) What is Anodising ? 2

PART—B

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

II (a) What are the factors that affect adsorption ? 4

(b) Write the chemical reaction takesplace in H_2–O_2 fuel cell and give the advantages of H_2–O_2 fuel cells. 4

III (a) Explain the theory of electro chemical corrosion. 4

(b) What are the differences between thermoplastic and thermosetting plastic ? 4

IV (a) Explain about the uniqueness of carbon. 4

(b) Suggest remedial measures in order to reduce green house effect. 4

PART—C

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

Unit – I

V (a) How will you distinguish between physical adsorption and chemical adsorption ? 4

(b) Explain the mechanism of electrolysis by taking molten NaCl as an example. 4

(c) Explain the following :

(i) Galvanic corrosion (ii) Differential aeration corrosion. 4

(d) What are primary and secondary cell ? Discuss one example of each. 3

Or

Marks

VI (a) List the important application of adsorption. 4

(b) (i) Why does blue colour of copper sulphate solution get discharged when iron rod is dipped into it ?

(ii) Calculate the EMF of the cell given :

$E^\circ\ Cu^{2+}/Cu = +0.34V$; $E^\circ\ Fe^{2+}/Fe = -0.44\ V$. 4

(c) Explain cathodic protection and Barrier protection method inorder to prevent corrosion. 4

(d) What are the differences between metallic conduction and electrolytic conduction ? 3

UNIT – II

VII (a) Define the following terms : (i) Functional group (ii) Isomerism. 3

(b) What are Homopolymer and copolymer and give two example each ? 4

(c) What are the qualities of a good fuel ? 4

(d) Explain the following : (i) Green house effect (ii) Acid rain. 4

OR

VIII (a) Differentiate between saturated and unsaturated compounds. 4

(b) Define the term composite. Explain the different types of composites. 4

(c) Write the monomers of the following polymers :

(i) Buna-s (ii) Neoprene (iii) Teflon (iv) Nylon 6. 4

(d) What is Green Chemistry ? Explain the scope of Green chemistry in the present world. 3