

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

APPLIED SCIENCE-II (CHEMISTRY)
(Common except DCP and CABM)

[Time : 1½ hours

(Maximum marks : 50)

Marks

PART—A

(Answer the following questions in one or two sentences. Each question carries 2 marks.)

- I Give reason and explain the following observations :
1. Aqueous solution of raw sugar becomes colourless when passed over animal charcoal. 2
 2. Air becomes dry in presence of silica gel. 2

PART—B

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

- II 1. Reduction potentials of Zn and Ag electrodes are -0.76 V and 0.80 V respectively :
- (a) Which one is a better oxidizing agent ?
 - (b) Which metal displaces the other metal from its solution ? 4
2. (a) What is the effect of temperature on electric conduction on metallic and electrolytic conductors ?
- (b) Rate of corrosion is more near to seashore area. Explain your reason. 4
- III 1. How will you represent Daniel cell ? Write the electrode reactions and cell reaction. 4
2. What is London smog ? What are the environmental impact of photochemical smog ? 4
- IV 1. Identify the functional group in the following molecules :
- (a) $\text{CH}_3\text{COOCH}_3$; CH_3OCH_3
 - (b) Write the possible isomers of C_4H_{10} . 4
2. Illustrate with two examples :
- (a) Saturated and unsaturated hydrocarbons.
 - (b) Condensation polymerization. 4

PART—C

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

UNIT—I

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| V | 1. | Physisorption can be changed to chemisorption. Illustrate with examples. | 4 |
| | 2. | (a) Explain the electrochemical theory of corrosion. | |
| | | (b) Galvanization. | 4 |
| | 3. | Write down the cell reaction Ni/Cd cell. How do represent it? | 4 |
| | 4. | Sketch O_2-H_2 fuel cell and cell reaction involved in it. | 3 |

Or

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| VI | 1. | Explain the electrolysis of molten NaCl. | 4 |
| | 2. | How are electrochemical cell classified and compare them with examples? | 4 |
| | 3. | What are different types of barrier protections? | 4 |
| | 4. | Which part of the iron corrodes if it partially immersed in an electrolyte? Give reason. | 3 |

UNIT—II

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| VII | 1. | (a) How you distinguish between saturated and unsaturated hydrocarbon? | |
| | | (b) Give two examples of nuclear fuels. | 4 |
| | 2. | (a) Mention the process used to improve the properties of rubber. | |
| | | (b) What are the monomers in Buna-S and Buna-N? | 4 |
| | 3. | High boiling gasoline fractions are not good fuels. Suggest a suitable process to convert them into good fuels. | 4 |
| | 4. | How does ozone layer depletion happens? | 3 |

Or

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| VIII | 1. | What are different type of polymerizations? Give examples. | 4 |
| | 2. | What are the differences between thermoplastic and thermosetting plastic? | 4 |
| | 3. | What is mean by propellants? How are they classified? | 4 |
| | 4. | How does rain becomes acid rain? | 3 |
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