

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2013

(CCSS)

Chemistry—Core Course

CH 6B 16—ORGANIC CHEMISTRY—III

Maximum : 30 Weightage

Time : Three Hours

I. Multiple choice and fill in the blanks type questions. Answer all *twelve* questions :—

- 1 Paper chromatography is basically _____ chromatography.
(a) Adsorption. (b) partition.
(c) both of the above. (d) None of the above.
- 2 The most basic among the following is _____.
(a) pyrrole. (b) pyridine.
(c) indole. (d) piperidine.
- 3 Green synthesis involves _____.
(a) enzymes. (b) minimum solvents.
(c) minimum reagents. (d) All of the above.
- 4 Carbohydrates are characterised by the presence of _____.
(a) OH groups. (b) Carbonyl groups.
(c) chiral carbons. (d) All of the above.
- 5 Which of the following reagent reacts with glucose and fructose to give the same product ?
(a) Hydroxyl amine. (b) phenyl hydrazine.
(c) hydrazine. (d) all of the above.
- 6 Which of the following is an azo dye ?
(a) Alizarin. (b) Methyl orange.
(c) phenolphthalein. (d) All of the above.
- 7 A group that gives the colour of a dye is called _____.
- 8 Malonic ester reacts with urea in presence of POCl_3 gives _____.
- 9 The attacking electrophile in the nitration of benzene using nitrating mixture is _____.

Turn over

- 10 Suggest the sugar present in RNA.
- 11 Suggest the monomer of Nylon 6.
- 12 UV spectroscopy is also called _____ spectroscopy.

(12 × ¼ = 3 weightage)

II. Short answer type questions. Answer all *nine* questions :

- 13 Explain the importance Rf value.
- 14 Draw the structure of malachite green.
- 15 Explain the tautomerism in nitromethane.
- 16 Mention any two applications of UV spectroscopy.
- 17 Explain the term 'isoelectric point'.
- 18 What is Gabriel phthalimide synthesis ?
- 19 How is ethanol differentiated from ethanal using IR spectroscopy ?
- 20 Enlist any two functions of lipids.
- 21 What is Lactose ?

(9 × 1 = 9 weightage)

III. Short essays or paragraph questions. Answer any *five* questions :

- 22 Discuss briefly the principle of column chromatography.
- 23 Discuss the NMR characteristics of ethyl bromide.
- 24 Discuss solid phase peptide synthesis.
- 25 Explain the Strecker synthesis of amino acids.
- 26 Discuss the structure of pyridine and comment on its electrophilic and nucleophilic reactions.
- 27 Discuss the structure of sucrose and comment on its reducing property.
- 28 Outline the synthesis and any two applications of ethyl acetoacetate.

(5 × 2 = 10 weightage)

IV. Essay questions. Answer any *two* questions :

- 29 Discuss in detail the structure of RNA and cellobiose.
- 30 Discuss a method of preparation of aniline and quinoline. Explain any two substitution reactions of each of them.
- 31 Discuss any *eight* principles of green chemistry citing examples.

(2 × 4 = 8 weightage)