60131 (Pages : 2) Name

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION
MARCH 2014

(UG–CCSS)

Core Course – Chemistry

CH 6B 16 – ORGANIC CHEMISTRY – III

Time : Three Hours Maximum : 30 Weightage

Write equations wherever necessary.

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

1. The heterocyclic base present in RNA is :
   (a) Adenine. (b) Guanine.
   (c) Uracil. (d) All of the above.
2. Column chromatography is basically _____ chromatography.
   (a) Adsorption. (b) Partition.
   (c) Both of the above. (d) None of the above.
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 anthraquinone dye?
   (a) Alizarin. (b) Methyl orange.
   (c) Phenolphthalein. (d) All of the above.
7. A group that increases the colour of a dye is called _____
8. Malonic ester reacts with urea in presence of $POCl_3$ gives _____
9. Under neutral conditions, nitrobenzene is reduced to _____

. Turn over

10. MAOS can be expanded as in green chemistry.'
11. Suggest a compound containing an active methylene group.
12. IR spectroscopy can be considered as spectroscopy.

(12 x = 3 weightage

II. Short Answer Type Questions. Answer all *nine* questions :

13. Explain briefly gas-liquid chromatography.
14. Draw the structure of the dye 'indigo'.
15. Explain the tautomerism in nitromethane.
16. Mention any *two* applications of NMR spectroscopy.
17. Explain the term "isoelectricpoint".
18. What are detergents? Give an example.
19. How is ethanol differentiated from ethanal using IR spectroscopy?
20. Enlist any *two* functions of lipids.
21. Which is more basic? Piperidine *or* pyridine. Rationalise your answer.

(9 x 1 = 9 weightage)

III. Short Essays *or* Paragraph Questions. Answer any *five* questions :

22. Discuss briefly the principle of TLC.
23. Discuss the NMR characteristics of ethyl bromide.
24. How is arabinose converted to glucose? Draw the configuration of D-glucose.
25. Outline the synthesis of methyl orange. Draw the structures responsible for different colours in acid and alkaline me lium.
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 cyano aceto ester

(5 x 2 = 10 weightage)

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

29. (a) Discuss in detail the primary, secondary and tertiary structures of proteins
    (b) Outline Hoffmann's elimination citing an example.

(3 + 1 = 4 weightage)

30. Discuss a method of preparation of aniline and quinoline. Explain any *two* substit reactions of each of them.
31. Discuss any *eight* principles of green chemistry citing examples.

[2 × 4 = 8 wei