C 21591 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY/IMPROVEMENT) EXAMINATION, MARCH 2017

(UG-CCSS)

Chemistry

CH 6B 16 – ORGANIC CHEMISTRY – III

Time : Three Hours Maximum : 30 Weightage

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

1. Carbyl amine reaction produces _____.
   (a) Isocyanides. (b) Cyanides.
   (c) Nitriles. (d) All of the above.
2. Liebermann's nitro so reaction is a diagnostic test for a _____.
   (a) Secondary amine. (b) Tertiary amine.
   (c) Primary amine. (d) All of the above.
3. Soft soap generally contains _____.
   (a) KOH. (b) NaOH.
   (c) $Ca(OH)_2$. (d) All of the above.
4. Nitrosation of tertiary amines with nitrous acid is an example of ---------- substitution reaction.
   (a) Electrophilic. (b) Nucleophilic.
   (c) Free radical. (d) All of the above.
5. Which among the following is most basic?
   (a) Furan. (b) Pyrrole.
   (c) Piperidine. (d) All are equally basic.
6. Carbohydrates are characterised by the presence of _____.
   (a) OH groups. (b) Carbonyl groups.
   (c) Chiral carbons. (d) All of the above.
7. Which one among the following is a globular protein?
   (a) Insulin. (b) Collagen.
   (c) Fibroin. (d) Myosin.
8. A group that imparts the colour for a dye is called _____.
9. Paper chromatography is classified as a _____ chromatography.

Turn over

10. The monomer of Nylon-6 is _____
11. Lactose contains _____ as monosaccharide units.
12. _____ is an example of a synthetic detergent.

(12 × ¼ = 3 weightage)

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

13. Comment on microwave assisted organic synthesis.
14. Draw the resonance structures of pyrole.
15. Nitromethane forms salt with NaOH. Explain.
16. Draw the structure of alizarin.
17. What are the heterocyclic bases present in DNA?
18. Explain mutarotation citing an example.
19. Explain structure of nicotine.
20. How is hydrogen bonding identified in alcohols using IR spectroscopy?
21. Predict the possible electronic excitations in benzene. Explain.

(9 × 1 = 9 weightage)

III. Short Essay *or* Paragraph Questions. Answer any *five* questions from seven :

22. How will you interconvert glucose and fructose?
23. Explain the secondary and tertiary structures of proteins.
24. Describe briefly the Hinsberg's method of separation of amines.
25. Explain the structure and applications of vitamin B6.
26. Outline the synthesis of indigo.
27. Give a brief account of synthetic detergents.
28. Predict the signals NMR spectra of acetone. Rationalise your answer.

(5 × 2 = 10 weightage)

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

29. Discuss in detail any four principles of green chemistry. Illustrate with examples.
30. Explain the synthesis and applications of any two active methylene compounds.
31. Discuss a method of preparation of pyrole and pyridine. Explain in detail their structures.

(2 × 4 = 8 weightage)