(Pages : 4) **R – 1268**

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2023

First Degree Programme Under CBCSS

Chemistry

Core Course XI

CH 1642 : ORGANIC CHEMISTRY III

(2017-2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in one word to maximum two sentences. Each question carries **1** mark.

1. How does glucose react with Fehling's solution?

2. Name one disaccharide and give its molecular formula.

3. Represent the zwitter ion form of an amino acid.

4. Give the structure of the monomer unit of Teflon.

5. Name the product obtained when ethyl lithium reacts with water.

6. State isoprene rule.

7. What is the product obtained when pyridine is heated with fuming nitric acid in the presence of conc.H_2SO_4.

8. Give the structure of paracetamol.

9. Name the purine bases found in DNA.

10. What product is obtained on boiling acetoacetic ester with dilute acid?

(10 × 1 = 10 Marks)

SECTION – B

Short Answer type. Answer any **eight** questions. Each question carries **2** marks.

11. What is meant by mutarotation?

12. Is fructose a reducing sugar? Justify your answer.

13. Give one method of preparation of furan.

14. Explain the term isoelectric point as applied to amino acid.

15. Explain the term genetic code.

16. Explain any one colour test for proteins and its chemistry.

17. Define the term acid value for a sample of fat or oil. What is the significance of the value regarding the quality of the fat or oil?

18. Give the chemical name and structure of vitamin C.

19. Define the term polydispersity. What is its significance in the area of polymer chemistry?

20. How is Nylon 66 prepared?

21. Give any two synthetic applications of $LiALH_4$.

22. What are sulpha drugs? Give any two examples.

(8 × 2 = 16 Marks)

SECTION – C

Short Essay type. Answer any **six** questions. Each question carries **4** marks.

23. Discuss the structure of starch and cellulose.

24. What are epimers? Explain with examples.

25. Which is more basic between pyridine and pyrrole? Explain with structure.

26. What are the nitrogen bases present in DNA and RNA? Represent its hydrogen bonding of base pairs with structure.

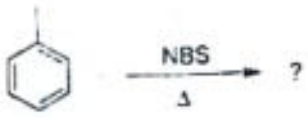
27. What are peptides? Discuss the carobobenzoxy method for their synthesis?

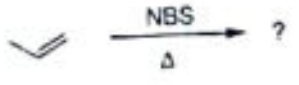
28. Elucidate the structure of nicotine.

29. Giving suitable examples, illustrate the mechanism of free radical polymerizations.

30. What is Reformatsky reaction? Illustrate and give the mechanism of the reaction.

31. Predict the structure of the product of the following reactions.

(a) 

(b) 

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

32. (a) Explain with examples why glucose is referred to as a reducing sugar.

    (b) Discuss how chain shortening can be introduced among aldoses.

33. Discuss the primary, secondary and tertiary structure of proteins.

34. What are Grignard reagents? How are they prepared? Discuss any five its synthetic applications.

35. (a) How are the following prepared?

    (i) Bakelite

    (ii) Buna S

    (iii) PVC

    (iv) Polyethylene

    (b) Write a note on biodegradable polymers with suitable examples.

(2 × 15 = 30 Marks)
