Bangalore University, Bengaluru -560001
B.Sc. V Semester, chemistry – V (Organic chemistry)
Blue print of model question paper – III

Name of the topic	No. of hours	No. of short Answer questions (2 Marks)			No. of long Answer questions (4 Marks)	Total marks
		Part-A	Part -B	Total		
Stereochemistry	8	3	3	**6**	**2**	**20**
Amines	5	1	2	**3**	**2**	**14**
Heterocyclic compounds	4	1	2	**3**	**1**	**10**
Chemistry of natural products	10	2	3	**5**	**4**	**26**
Spectroscopy of Organic compounds	8	3	2	**5**	**2**	**18**
Industrial Organic chemistry	5	2	1	**3**	**2**	**14**
Total	40	12	13	**25**	**13**	**102**

PART – A (12 x 2 =24)

1. Stereochemistry
2. Stereochemistry
3. Stereochemistry
4. Amines
5. Heterocyclic compounds
6. Chemistry of natural products
7. Chemistry of natural products
8. Spectroscopy of organic compounds
9. Spectroscopy of organic compounds
10. Spectroscopy of organic compounds
11. Industrial Organic chemistry
12. Industrial Organic chemistry

PART – B (13 x 6 = 78)

13. a) Stereochemistry

b) Amines
14. a) Stereochemistry
    b) Heterocyclic compounds
15. a) amines
    b) Chemistry of natural products
16. a) Amines
    b) Spectroscopy of organic compounds
17. a) Heterocyclic compounds
    b) Chemistry of natural products
18. a) Chemistry of natural products
    b) Stereochemistry
19. a) Chemistry of natural products
    b) Amines
20. a) Chemistry of natural products
    b) Heterocyclic compounds
21. a) Chemistry of natural products
    b) Spectroscopy of organic compounds
22. a) Spectroscopy of organic compounds
    b) Stereochemistry
23. a) Spectroscopy of organic compounds
    b) Industrial Organic chemistry
24. a) Industrial Organic chemistry
    b)Stereochemistry
25. a) Industrial Organic chemistry
    b)Chemistry of natural products

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Time: 3 Hours Max. Marks: 70

PART – A

Answer **any eight** of the following questions. Each question carries **two** marks. (8 x 2 = 16)

1. Define centre of symmetry. Give an example
2. What is meso compound? Give an example
3. Write two differences between enantiomers and diastereomers
4. Explain Hofmann's elimination reaction
5. Explain nitration reaction of quinoline
6. How the presence of five hydroxyl groups in glucose is established?
7. Explain the effect of hydrogen bonding on the position of λmax in IR spectrum
8. Mention factors affecting on position of IR absorption peak
9. Write the conditions for IR active organic compounds.
10. Give graphical representation of spectra of lycopene
11. What are antileprotic drugs? Give an example
12. Define chemotherapy.

PART – B

Answer **any nine** of the following questions. Each question carries **six** marks. (9 x 6 = 54)

13. a) Write erythro and threodiasteromers of tartaric acid
    b) Write the acylation reaction of primary amines (4 + 2)
14. a) Draw the conformations of 1,4 dimethyl cyclohexane
    b) How pyridine is prepared from nicotinic acid? (4 + 2)
15. a) Explain the formation of quaternary ammonium salt using alkyl halide and primary amine
    b) Write the structure of quinine (4 + 2)
16. a) How BDC is converted to i) Phenyl hydrazine ii) 1-phenyl azo -2- naphthol?
    b) Mention two advantages of spectroscopy (4 + 2)
17. a) Explain the relative basicity of pyrrole, pyridine and piperidine.
    b) How the presence of pyridine ring in nicotine is established (4 + 2)
18. a) How the ring size of glucose established by HNO_3 oxidation?
    b) Define racemization (4 + 2)
19. a) How fructose is converted to glucose?
    b) How isopropyl amine is prepared by reductive amination of propanone (4 + 2)
20. a) Give four evidences in favour of ring structure of glucose.
    b) How indole is prepared by Fischer synthesis? (4 + 2)
21. a) How alkaloids are classified based on heterocyclic ring present? Give an example for each class
    b) Give the graphical representation of spectra of benzene (4 + 2)
22. a) Explain stretching and bending modes of vibrations.
    b) How cis and trans isomers identified based on melting and boiling point? (4 + 2)
23. a) Explain the NMR spectrum of Cl_2CHCHO
    b) What are narcoticdrugs? Give an example (4 + 2)

24. a) Explain Otto-Witt theory of colour and constitution
    b) Write E and Z isomers of 2-bromo 3-chloro 2- butene (4 + 2)
25. a) Describe the synthesis of indigo from aniline
    b) What is glycosidic bond? Give example (4 + 2)