

**ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
CUDDALORE – 607001**

DEPARTMENT OF BIOCHEMISTRY

SUBJECT: BIOMOLECULES

SUB CODE: BC101S

SUB INCHARGE: SHIFT I & SHIFT II (J.JOHN ROBERT, SETHA LAKSHIMI)

SECTION-A

I. ANSWER IN ONE SENTENCE

1. Number of asymmetric carbon atoms in glucose is
2. The α and β cyclic forms of D-glucose are known as
3. Inulin is a polymer of
4. Which of the following type of DNA has left handed helix
5. In tRNA the acceptor arm is capped with a sequence
6. In T ψ C arm, the symbol ψ represents
7. The amino acid essential for heme synthesis
8. The nature of bilirubin is a
9. What is stereoisomer? Mention the number of isomers of glucose
10. What is known as racemic mixture?
11. Why sucrose is called as a non-reducing sugar?
12. How amylopectin differ from amylose?
13. What is Chargaff's rule? Why it is not applicable to RNA?
14. Why T_m (melting temperature) is greater for DNA with higher GC content?
15. Define porphyrins
16. What is heme?
17. Describe the structure of indole
18. Mention any two biological importance of pyrrole
19. Ionic bonds are otherwise called as
20. _____ have the same molecular formula but possess
21. a pentose contains
22. Starch made up of long chain of _____ molecules
23. Oligosaccharides composed of
24. Which of the following carbohydrate is dietary fibre?
25. The number of hydrogen bonds between guanosine and cytosine in
26. RNA contains Uracil instead of
27. The first pigment formed from the degradation of Hemoglobin is
28. Porphyrins are break down products of

29. Define racemic mixture?
30. Define mutarotation
31. Give examples for polysaccharides
32. Define oligosaccharides
33. Give Chargaff's equivalence rules.
34. Draw the structure of Thymine
35. Write the importance of pyrrole.
36. Draw the structure of heme nucleus.
37. Define isomerism
38. Define anomer.
39. Barfoed's solution is not reduced by
40. Glucose on reduction produces
41. The heteropolysaccharide that acts as an anticoagulant is
42. The milk sugar is
43. The number of nucleotide pairs present in one turn of DNA is
44. DNA polymers are
45. The amino acid that acts as the precursor for porphyrin synthesis is
46. The prosthetic group of heme in hemoglobin is
47. The number of hydrogen atoms removed from the substrates by pyridine linked dehydrogenases are
48. The amino acid that yields indole is
49. What is mutarotation?
50. What are isomers?
51. What do you mean by a reducing disaccharide?
52. What is invert sugar?
53. What are nucleosides?
54. What is hyperchromicity?
55. What is carboxyhemoglobin?
56. What are bile pigments?
57. Draw the structure of imidazole.
58. Define epimers.
59. Galactose on reduction gives
60. The possible isomers of a given compound is given by the formula
61. The storage polysaccharide in animals is
62. Which sugar on hydrolysis yields invert sugar
63. The nitrogenous base absent in DNA is
64. Methyl guanosine cap is present in
65. Porphyrins are cyclic compounds made of
66. Catabolism of heme ring produces
67. Which is an indole derivative

68. Imidazole ring is present in
68. Define Mutarotation.
69. What are Epimers?
70. What is Invert sugar?
71. Define Pectin.
72. Define Nucleotide.
73. Define Melting temperature.
74. What are Porphyrins?
75. Bile pigments.
76. Importance of Thiazole
77. Importance of Imidazole
78. Starch is an example of-----
79. Write the structure of nitrogen bases
80. What is different between reducing and non-reducing sugar?
81. Define bond
82. What are weak bonds?
83. Write an example of disaccharide
84. Define stereoisomer
85. Define isomerism
86. Define carbohydrate
87. Write the examples of heteropolysaccharide
88. Define prosthetic group
89. What is nucleotide?
90. What is nucleoside?
91. Draw the structure of purine derivatives
92. Draw the structure of pyrimidine derivatives

SECTION-B

1. Write a short note on mutarotation of glucose
2. Explain the oxidation and reduction reactions of monosaccharides
3. What are disaccharides? Explain the structure and biological importance of sucrose
4. Describe the structural formation of nucleoside, nucleotide and polynucleotide
5. Explain the chemical nature and biosynthesis of bile pigments
6. Give a brief account on the biological importance of imidazole
7. Explain the osazone reaction.
8. Write the structure and functions of heparin.
9. Write a note on tRNA.

10. Write the functions of hemoglobin.
11. Explain the structure and functions of glycogen.
12. Write the importance of Indole rings.
13. Different between reducing and non reducing sugar
14. Write the structure and functions of hyaluronic acid
15. Write notes on properties of monosaccharides
16. Write an account on biological properties of nucleic acids?
17. Write notes on heterocyclic compounds
18. Write note on occurrence, structure, functions of glucose, and fructose
19. Describe the importance of any two metalloporphyrins
20. Bring out the biological importance of pyridine
21. Write notes on properties and types of DNA?

SECTION-C

1. Explain in detail on classification of carbohydrates
2. Explain the structure and biological importance of starch and glycogen
3. Elaborate the Watson and Crick model of DNA double helical structure
4. Explain in detail on the structure and functions of hemoglobin
5. Describe the biological importance of heterocyclic compounds in detail
6. Explain the occurrence, structure and functions of monosaccharides.
7. Elaborate on the structure and functions of structural polysaccharides.
8. Elaborate on the structure and functions of cellwall polysaccharides
9. Discuss the Watson crick structure for DNA.
10. Write the chemical nature and biological significance of bile pigments.
11. What are imidazoles? Write their biological importance.
12. Discuss the biological importance of pteridine and pyrrole with suitable examples
13. Write detail on chain and ring structure of glucose