



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – CHEMISTRY

SECOND SEMESTER – APRIL 2017

CH 2955- BIO-ORGANIC CHEMISTRY

Date: 03-05-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part-A

Answer ALL questions.

(10 x 2= 20)

1. Mention the important industrial and biological applications of agar-agar.
 2. Differentiate the anabolism from metabolism process.
 3. Sketch the molecular structures of heterocyclic bases in DNA.
 4. What are known as transcription and translation in protein synthesis?
 5. How is Herzig-Meyer method useful in estimating the presence of N-alkyl group in alkaloids?
 6. Identify the product in the following reaction.
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7. How does the fusion of rings to each other in cholesterol increase the complications of stereochemistry?
 8. How will you convert cholesterol into androsterone?
 9. Comment on the influence of extended conjugation on the property of anthocyanins.
 10. How are flavonoids classified? How do they vary structurally?

Part-B

Answer any EIGHT questions.

(8 x 5= 40)

11. How is glycoside synthesized? Discuss the biological applications of glycosides.
12. Write short notes on mutarotation.
13. Discuss the key steps involved in the citric acid cycle.
14. State and explain the principle of electro dialysis.
15. How is dithymyl mercury condensed with tri-*o*-benzoyl-D-ribofuranosyl chloride?
16. What is known as denaturation of proteins? What are its consequences?
17. Discuss the importance of Hofmann exhaustive methylation method in determining the structure of alkaloids.
18. Write short notes on isoprene and gemdialkyl rule.
19. How will you convert androsterone to testosterone?

20. List out the synthetic evidences to elucidate the constitution of oestrone.
21. Outline Robinson's method of synthesizing anthocyanine.
22. How is flavonone converted to isoflavone?

Part-C

Answer any FOUR questions.

(4 x 10= 40)

- 23 a. Explain the various steps involved in the Embden-Meyerhof pathway and overall energy output involved in glycolysis process. (8)
- b. Why do glucose and mannose form the same osazone? (2)
24. Outline the mechanism of decarboxylation and urea cycle in catabolism of aminoacids.
- 25 a. Explain how electrophoresis method is useful in protein separation. (5)
- b. Discuss the important applications of glycogen and maltose. (5)
- 26 a. Discuss any one method of synthesis of squalene. (6)
- b. Explain the structural elucidation of papavarine. (4)
- 27 a. Discuss the synthesis and functions of cortisone. (5)
- b. Discuss the stereochemistry of cholesterol. (5)
28. Explain the biosynthesis of flavonoids.

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