

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY & PLANT BIO-TECH.

FIFTH SEMESTER – NOVEMBER 2009

PB 5403 - PLANT BIO-CHEMISTRY

Date & Time: 14/11/2009 / 9:00 - 12:00 Dept. No.

Max. : 100 Marks

Part A

(20 marks)

Answer All questions

I Choose the Correct Answer

(5 x 1 = 5 marks)

01.is the substance that denotes a proton:

- a. Acid b. Base c. Peptide d. Fat

02. Which of the following one is present in sugarcane?

- a. sucrose b. maltose c. fructose d. cellulose

03. protein is conjugated with nucleic acids.

- a. Albumin b. Globulin c. Histone d. Prolamine

04. Pick the odd one out:

- a. Steroids b. Terpenes c. Carotenoids d. Lecithin

05. are the esters of fatty acids with high molecular weight monohydroxy alcohols.

- a. Oils b. Phospholipids c. Waxes d. Glycolipids

II State whether the following statements are True or False

(5 x 1 = 5 marks)

06. Agarose from algal seaweed is used in electrophoresis.

07. Cellulose is a polysaccharide present mostly in plant cell wall.

08. Molecular weight of protein is expressed in Dalton.

09. Esterification of cholesterol occurs at fourth carbon position.

10. Enzyme is temperature and substrate specific.

III. Complete the following

(5 x 1 = 5 marks)

11. The denotes the relative concentration of hydrogen ions in a solution.

12. Phenylalanine is a amino acid.

13. Polypeptides areproteins.

14. Saturated fatty acids contain only bond.

15. acts as a competitor for succinic acid.

IV. Answer all, each in about 50 words

(5 x 1 = 5 marks)

16. Distinguish between anabolism and catabolism.
17. Mention any two polysaccharides present in plant cell wall.
18. What is disulphide bond?
19. Give the structure of an amino acid.
20. What are phospholipids?

PART B

(5 x 8 = 40 marks)

Answer any five, each within 350 words only. Draw diagrams and flowcharts wherever necessary.

21. Briefly write the working principle of centrifuge and chromatography.
22. Explain how carbohydrate molecules are classified?
23. Give brief account on different types of gel used in electrophoresis.
24. Write short notes on alkaloids and flavanoids.
25. Give an account of classification of enzymes.
26. Mention the general features of globular and fibrous proteins.
27. What are coenzymes? List out the various coenzymes involved in catalytic reaction.
28. Define and classify fatty acids with suitable examples

PART C

(2 x 20 = 40 marks)

Answer the following, each within 1500 words only. Draw diagrams and flowcharts wherever necessary.

- 29a. Explain the working principle, design and importance of spectrophotometer.

Or

- b. i. Write notes on pectic compounds.
- ii. Explain the structure and function of monosaccharides.

- 30a. Explain the structure of a protein. Enumerate the biological functions of proteins.

Or

- b. i. Describe the general classification of lipids.
- ii. Give a brief account of oxidation of fatty acids.
