

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2009 Admission - IInd Semester
Final Examination - August 2010

Cat. No. : Ssac 1202
Title : Agricultural Biochemistry (2+1)

Max. marks: 80
Time : 3 hours

(20 x 0.5 = 10)

I. Answer all questions

Fill up the blanks

1. The storage carbohydrate in plants is mainly -----.
2. An aromatic amino acid found in proteins is -----.
3. Esters of fatty acids with glycerol are called -----.
4. Glucose on reduction yields -----.
5. NADPH and pentoses are produced by ----- pathway.
6. The first stable compound formed in Calvin cycle is -----.
7. The base present in RNA but not in DNA is -----.

Match the following

- | | |
|-----------------|--------------------|
| 8. Lecithin | a. Enzyme |
| 9. Tyrosine | b. Phospholipid |
| 10. Nicotine | c. Amino acid |
| 11. Aldolase | d. Alkaloid |
| 12. Oil | e. Tripeptide |
| 13. Glutathione | f. Triacylglycerol |

State True or false

14. Glycine is a heterocyclic amino acid.
15. Rancidity of fat is characterized by acid number.
16. Maltose contains a glucose and fructose.
17. Glycerol or lactate can be converted to glucose in gluconeogenesis.
18. The sugar present in DNA is ribose.
19. Beta oxidation of fatty acids occurs in mitochondrial matrix.
20. RUBISCO is an enzyme involved in dark reaction of photosynthesis.

II. Write answers in a word or sentence / Define :

(10 x 1 = 10)

1. The cell organelle in which ATP is mainly produced.
2. List out the six major classes of enzyme classification.
3. Define iodine number.
4. What are disaccharides?
5. What is the end product of aerobic glycolysis?
6. The cofactor required by transaminases.
7. Name the three carbon unit produced during beta oxidation of odd chain fatty acids.
8. Which RNA functions as an adaptor in protein synthesis.
9. **Secondary metabolites**
10. **Biodegradable plastics**

III. Write short notes on ANY TEN

(10 x 2 = 20)

1. Plant cell wall components
2. Plant proteins
3. Phospholipids
4. Biodiesel
5. Structure of amylopectin
6. Differentiate DNA and RNA.
7. Oxidative phosphorylation
8. Transamination of amino acids
9. Biosynthesis of sucrose
10. Significance of CAM pathway
11. Classification of terpenoids
12. Applications of alkaloids

IV. Write short essays on ANY FOUR of the following

(4 x 5 = 20)

1. Explain the IUB system of enzyme classification.
2. Discuss on the applications of carbohydrates.
3. Give an account on the structure of DNA.
4. Explain the biosynthesis of saturated fatty acids.
5. What is photorespiration? Explain.
6. Explain the classification of phenolics with examples.

V. Write essays on ANY TWO

(2 x 10 = 20)

1. Explain the classification of proteins in detail.
2. Explain the pentose phosphate pathway and its significance.
3. Give an account on the integration of intermediary metabolism of carbohydrate, lipids and amino acids.