

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2008 Admission
IInd Semester Final Examination - September 2009

Cat. No. : Ssac 1202

Title : Agricultural Biochemistry (2+1)

Max. marks: 80

Time : 3 hours

I Fill up the blanks

20 x 0.5 = 10

1. All the aminoacids found in the Protein are of L-configuration except -----
2. Dihydroxy acetone is optically -----
3. The process of alkali hydrolysis of oil is called -----
4. The non-protein components of enzymes are called as -----
5. Biosynthesis of glucose from non-carbohydrate precursors is known as -----
6. Primary CO₂ acceptor in C₄ pathway is -----
7. The reductant in fatty acid synthesis is -----
8. Compounds containing aromatic ring bearing one or more hydroxyl groups are called as -----

Match the following

9. TCA cycle	a) mitochondria
10. Squaline	b) Shikimate pathway
11. ETC	c) Ketone bodies
12. Phenol	d) Amphibolic pathway
13. Acetoacetate	e) Cholesterol

State True or False

14. β – alanine is a non-protein aminoacid .
15. Oleic acid is an essential fattyacid for humans .

16. TCA cycle operates in Mitochondrial Matrix
17. Zymogen is the precursor form of the enzyme in an active form
18. Simple proteins yield only α – aminoacids on complete hydrolysis
19. Substrate level phosphorylation is associated with electron transport chain
20. Cellulose is the principle storage polysaccharide in plant cells.

II. Write answers in a word or sentence / Define

10 x 1 = 10

1. Waxes
2. Essential aminoacids
3. Cofactors
4. Oxidative phosphorylation
5. Alkaloids
6. Anabolism
7. Transamination
8. Acid value of an oil
9. Anomers
10. Complex proteins

III. Write short notes / answer etc on Any Ten

10 x 2 = 20

1. What is the reaction of aminoacid with Ninhydrin
2. How do alkaloids differ from terpenes?
3. Explain Amphoteric nature of aminoacids
4. Explain rancidity of fats

5. Write note on phospholipids
6. Classify aminoacids based on polarity
7. Explain the reducing property of sugars
8. Explain the function of any hydrolase with suitable example
9. Write the structure of amylose and amylopectin
10. List out the groups of enzymes in IUB recommended order
11. How are alkaloids classified?
12. What are the major pathways used for the biosynthesis of secondary metabolites?

IV Write short essays on Any Four of the following

4 x 5 = 20

1. Explain conversion of one mole of D-Glucose to two moles of pyruvic acid in cytoplasm.
2. Describe the structure of proteins at all the levels of organization
3. Write the compounds of electron transport chain and indicate the flow of electrons and the site of ATP formation
4. Describe in details about the structure of starch
5. Classify the aminoacids based on structure with an example of each

V Write essays on Any Two

2 x 10 = 20

1. How is Pyruvic acid oxidatively decarboxylated and get oxidized in TCA cycle? Indicate the enzyme and cofactors with energy production
2. Describe the steps involved in protein biosynthesis and explain the different post-translational modification occurring in proteins.
3. What are the importance of plant phenolics derived through shikimate pathway? How phenolics are biosynthesized and Explain