

**MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION**

B.Sc. (Agri.)

Semester : V (New)	Term : I	Academic Year : 2013-14
Course No. : SSAC 354	Title : Biochemistry	
Credits : 3(2+1)		
Day & Date : Thursday, 24.10.2013	Time : 14.00 to 17.00	Total Marks : 80

- Note :**
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 a) Define polysaccharides. Classify them on the basis of function with one example of each class.
b) Define proteins. Give the properties of proteins.
- Q.2 a) Classify amino acid on the basis of composition.
b) What are lipids? Enlist chemical properties of lipids.
- Q.3 a) Define enzyme. Give functions of enzymes.
b) Give hydrolytic products of RNA and DNA.
- Q.4 a) Explain sequence of reactions in TCA cycle.
b) Enlist the water soluble vitamins of nutritional significance and mention their coenzyme derivatives.
- Q.5 a) State the sequence of reactions of Beta oxidation of fatty acid.
b) Classify fatty acid with suitable example of each class.
- Q.6 a) Explain the scope and importance of Biochemistry in the field of Agriculture.
b) Define Biomolecule. Give the characteristics of Biomolecule.
- Q.7 a) Explain the importance of immobilized enzymes in different agro industries.
b) Define Bioenergetics. Enlist the components of electron transport chain.
- Q.8 a) What is phosphorylation? Enlist the types of phosphorylation.
b) What are glycosides? Give physiological role of glycosides.
- Q.9 a) Explain biosynthesis of lipids.
b) Differentiate between gum and mucillages.
- Q.10 a) Define plant cell. Give the functions of important plant cell organs.
b) Give classification of alkaloids with one example of each class.

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SECTION "B"

Q.11 Fill in the blanks.

- 1) The example of trisaccharide is _____.
- 2) Betaoxidation of fatty acid was proposed by _____.
- 3) The first essential amino acid is discovered by _____ in 1935.
- 4) The process of formation of soap is called _____.
- 5) The iodine value is the measure of _____ in fatty acid.
- 6) Power house of energy of living cell is _____.
- 7) Pentose phosphate pathway is the source of _____.
- 8) The transformation of sugar to glycogen is known as _____.

Q.12 Match the Pairs.

- | "A" | "B" |
|---------------------|---------------------------------|
| 1) Amylopectin | a) Phospholipids |
| 2) Ribosomes | b) Catechin |
| 3) Cephalin | c) Father of Biochemistry |
| 4) Tannin | d) Father of modern enzymology |
| 5) Antoine Lavoiser | e) Site of protein biosynthesis |
| 6) J.B. Sumner | f) Starch |
| 7) Niacin | g) Antiscurvey |
| 8) Vitamin C | h) Pellegra |

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SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: V (New)	Term	: I	Academic Year	: 2015-16
Course No.	: SSAC 354	Title	: Biochemistry		
Credits	: 3(2+1)				
Day & Date	: Wednesday, 28.10.2015	Time	: 14.00 to 17.00	Total Marks	: 80

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.



SECTION "A"

- Q.1 a) Define Biochemistry. Give scope and importance of Biochemistry in Agriculture.
b) Define carbohydrates. Write down the functions of carbohydrates and properties of monosaccharides.
- Q.2 a) What are the nucleic acids? State the hydrolytic products of RNA and DNA.
b) Define amino acids. Write down the properties and functions of amino acids.
- Q.3 a) Define lipid. Classify the lipid on the basis of products of hydrolysis.
b) Write down the classification of fatty acids.
- Q.4 a) Define cell and give the importance of water.
b) Define biomolecule. Write down the important biomolecules of life.
- Q.5 a) Define protein. Write down the functions and properties of proteins.
b) Differentiate between exergonic and endergonic reactions.
- Q.6 a) Classify the enzyme and enlist the properties of enzymes.
b) Enlist the methods of immobilization of enzymes and explain any one of them.
- Q.7 a) Give Co-enzyme derivatives of water soluble vitamins with their functions.
b) Explain sequence of reactions of glycolysis.
- Q.8 a) Define phosphorylation. Differentiate between cyclic and non cyclic photophosphorylation.
b) Explain biosynthesis of Proteins.
- Q.9 a) Give the classification of tannins.
b) Differentiate between gums and mucillages.
- Q.10 a) What are alkaloids? Give important classes of alkaloids.
b) State the sequence of reactions of *Beta*-oxidation of fatty acid.

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SECTION "B"

Q.11 Fill in the blanks.

- 1) The example of trisaccharide is _____.
- 2) The term biochemistry was first introduced by _____.
- 3) The first essential amino acid is discovered by _____ in 1935.
- 4) The glucosidic linkage present in cellulose is _____ type.
- 5) In the intracellular layers of cells _____ acts as cementing material.
- 6) Agar agar is an example of _____.
- 7) The organic catalyst produced by living cell is called _____.
- 8) The transformation of sugar to glycogen is known as _____.

Q.12 Match the following pairs.

"A"

"B"

- | | |
|----------------------|------------------------------|
| 1) Vit. D | a) Catechin |
| 2) Linolenic acid | b) RNA |
| 3) Antoine lavoisier | c) Antiscurvey |
| 4) Cephalins | d) Storage of polysaccharide |
| 5) Glycogen | e) Phospholipids |
| 6) Niacin | f) Father of biochemistry |
| 7) Protein synthesis | g) Unsaturated fatty acid |
| 8) Ribosomes | h) Osteomalacia |

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