BIOCHM-231

Section A

1) a)Define biochemistry? Write its scope and importance of biochemistry in detail.

   b) Explain in brief the chemical and physical properties of water.

2) a)Define biomolecules. Enlist them and write their general characteristics.
   b)Classify carbohydrates along with suitable examples.

   OR Define carbohydrate. How are carbohydrates classified on the basis of behavior upon hydrolysis?

3) a) Explain in brief the properties of monosaccharide.
   b) Write on structural organization of protein.

4) a) What are nucleic acids? Write their types along with structural components.

   b) Write in detail mechanisms of enzyme action.

5) a) Give the importance of lipids.
   b) Enlist the steps involved in glycolysis.

6) a) What are lipids chemically? How are they classified?
   b)Define glycoside. Give classification of glycoside.

7) a) Give outline of TCA cycle.
   b)Explain beta-oxidation of fatty acids. Describe beta oxidation of fatty acids with generation of ATP molecules. OR
   Write the amount of energy generated from complete

oxidation of fatty acids.

c) Define fatty acids. Write down the functions of fatty acids.

8) What are proteins? Classify proteins based on composition with examples.

9) Define nucleic acids? State the functions of nucleic acid.

10) a) Classify amino acids with suitable examples.
b) Explain the term photosynthesis. List out the photosynthesis pigment. What is hill's reaction?

11) Define micro propagation. Explain in detail stages and application of micro propagation.

12) Enlist the different methods of gene transfer and describe in brief the Agrobacterium mediated gene transfer with suitable diagram.

13) What is PCR? Describe the steps involved in PCR?

14) a) Classify enzymes as per IUB systems of classification. Explain the factors which affect enzyme activities.
b) Differentiate between reducing sugar and non-reducing reducing sugar.

15) Define soma clonal variation.
b) Give the applications and causes of Soma clonal variation.

16) Define molecular marker. Write down molecular applications.

17) Enlist the different methods of gene transfer and describe in brief the Agrobacterium mediated gene transfer with suitable examples.

SECTION B

Que. 1) Define the following terms:

a) Buffer

b) Mutarotation

c) Rancidity

d) Disaccharides

e) Phospholipid

f) Restriction enzyme

g) Callus

h) Cybrid

i) Lipids

j) Allosteric enzyme

k) pH

l) Nucleotides

m) Nitrate assimilation

n) Marker Assisted Breeding

o) Synthetic seed Biochemistry

p) Biomolecules

q) Carbohydrates

r) Fatty acids

s) Glycoside

t) Amino acid

u) Proteins

v) Nucleic acids

w) Soma clonal Variation

x) Micro propagation

y) Molecular Marker.

Que.2) Give contribution of the following scientists:

1) Antonin Lavoisier

2) Berzelius

3) F. Laibach

4) H. G. Khorana

5) G. Haberlandt

6) Guha and Maheswari

7) Watson and crick

8) Louis Pasteur

Que. 3) Do as directed:

1) Give one example of enzyme which involved in catalysis of oxidation-Reduction reactions.

2) Draw the structure of sucrose.

3) Mention Michaelis-Menten equation.

4) What do you understand by hydrolytic rancidity?

5) What is saponification?

6) What is the pH requirement for tissue culture media?

7) Give the contribution of Guha and Maheshwari?

8) What do you mean by callus?