Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: Nov./Dec. 2023
Faculty: Science and Technology

Program: B.Sc. Biotech (04) **Semester: III** **SET: A**
Program (Specific): Biotechnology **Course Type: Core**
Class: S.Y.B.Sc. **Max. Marks: 35**
Name of the Course: Metabolism
Course Code: 23 BBT-304 **Time: 2 Hr**

Instructions to the candidate:

1) ***There are 4 sections in the question paper. Write each section on separate page.***
2) ***All Sections are compulsory.***
3) ***Figures to the right indicate full marks.***
4) ***Draw a well labelled diagram wherever necessary.***

SECTION: A

Q1) Answer the following (Attempt any 5/6) **5**

1. Enlist any two examples of essential amino acids.
2. Define 'Free energy'.
3. Name the pathways for biosynthesis of purines and pyrimidines.
4. What is the role of ketone bodies?
5. Give full form of TCA cycle and ATP.
6. Draw the structure of Pyrimidine.

SECTION: B

Q2) Answer the following (Attempt any 5/6) **10**

1. Define transamination reaction. Give its one example.
2. Compare aerobic and anaerobic glycolysis.
3. Give four disorders related to amino acid metabolism.
4. Enlist the regulatory enzymes of glycolysis.
5. Differentiate between glycogenesis and glycogenolysis.
6. Give two examples of oxidation reactions.

SECTION: C

Q3) Answer the following (Attempt any 2/4) **8**

1. Write a short note on -Homocystinuria.
2. Discuss about regulation of Pentose Phosphate Pathway.
3. Summarize on the interrelationship of Kreb's cycle, glycolysis and amino acid biosynthesis.

[P.T.O]

4. With the help of diagrammatic representation explain ATP energy cycle.

SECTION: D

Q4) Answer the following (Attempt any 2/4) **12**

1. Discuss the reactions of Urea cycle in detail.
2. Summarize on biosynthesis of Purines.
3. Describe Oxidative phosphorylation in detail and also state its significance.
4. Give a detailed account on beta oxidation of fatty acids.