

Parvatibai Chowgule College of Arts and Science (Autonomous)
Post Graduate Diploma in Clinical Genetics & Medical Laboratory
Techniques (PGDCG&MLT)
February 2022 Semester I End Examination

Semester: I

Max. Marks: 30 Marks

Course Title: **Clinical Biochemistry I**

Course Code: **PGD-CGMLT-C2**

Duration: **2 Hours**

Q.I. Answer ANY FIVE the following (10)

1. Write a brief note on non-electrolytes.
2. Enlist the functions of carbohydrates in cells.
3. Differentiate between monomeric enzymes and oligomeric enzymes.
4. What are buffers? Write a brief note on the various types of buffers.
5. Differentiate between essential amino acids and non-essential amino acids.
6. State any four functions of calcium.

Q. II. Answer ANY TWO of the following (10)

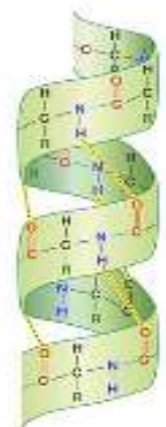
1. Write a note on the cytoplasm as an important component of a eukaryotic cell.
2. Describe a test used to detect glycerol. In addition, write a note on the sources and uses of glycerol.
3. Give an account on any two water soluble vitamins.

Q. III. Answer ANY TWO of the following (10)

1. (x) is an enzyme that is confined to a particular cell organelle. Hence, the detection and non-detection of (x) can indicate the presence and absence of the source respectively.

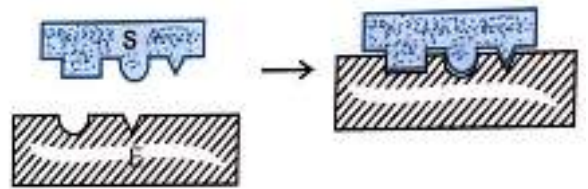
Based on the above information, identify the type of enzyme that (x) can be classified into. State the uses of such enzymes. Furthermore, identify the associated cell organelles if (x) was, **i.** ATP synthase, **ii.** Catalase, **iii.** Galactosyl transferase, and **iv.** Lactate dehydrogenase

2. The image on the right depicts a structure of a protein molecule. Identify and write a short note on the protein structure depicted in the image. State the bonds that stabilize this structure. In addition, give a brief comparative account on globular proteins and fibrous proteins.



P.T.O

3. The image on the right is a diagrammatic representation of an enzyme-substrate complex formation. Study the diagram carefully and answer the following questions.



Define the term “enzyme”. Identify and write a note on the specific enzyme-substrate complex formation model depicted in the diagram. Compare this model with other models of enzyme-substrate complex formation that you have studied.
