

B.Sc. Final Sem-V
B.Sc. 3501 - Biochemistry Paper-I (Metabolism-I)

P. Pages : 2

Time : Three Hours



GUG/W/19/1326

Max. Marks : 50

-
- Notes : 1. All questions are compulsory.
2. All questions carry equal marks.

1. Write detailed account of 'High energy phosphate compounds'. 10

OR

Describe in detail how metabolism is studied with the help of intact organisms, excised organs & organ slices.

2. Give a detailed account of glycolysis with its regulation. 10

OR

Write a detail note on Glyoxylate cycle and explain its role in conversion of fats into carbohydrates.

3. a) Briefly explain ATP – ADP cycle. 2½

b) How mutation studies are useful in metabolic studies. 2½

c) Explain anaplerotic nature of TCA cycle. 2½

d) Briefly explain ATP-synthase complex. 2½

OR

e) Give the concept of phosphate potential. 2½

f) Explain the use of tracer studies in metabolism. 2½

g) Enlist the enzymes & coenzymes of pyruvate dehydrogenase complex with its role. 2½

h) Write a note on bypass reactions of gluconeogenesis. 2½

4. a) How inhibitors can be used to study metabolism. 2½

b) Explain the concept of free energy. 2½

c) Explain futile cycle in carbohydrate metabolism. 2½

d) Describe in brief chemiosmotic hypothesis. 2½

OR

e) Explain the concept of Redox potential. 2½

f) Describe the clinical techniques employed in metabolic studies. 2½

g) Write note on – Glycogen storage diseases. 2½

h) Write note on – inhibitors of oxidative phosphorylation. 2½

5. Answer **any ten** of the following.

a) Define entropy. 1

b) Define enthalpy. 1

c) Write chemical structure of cAMP. 1

d) Write two advantages of using purified enzymes in metabolic studies. 1

e) What is meant by organectomy. 1

f) Give any two advantages of tissue culture in metabolic studies. 1

g) Draw Cori cycle. 1

h) What is gluconeogenesis. 1

i) Define prochirality. 1

j) Write the significance of malate & glycerophosphate shuttle system. 1

k) Define substrate level phosphorylation. 1

l) Give the example of uncouplers in oxidative phosphorylation. 1
