NKT/KS/17/5134

Bachelor of Science (B.Sc.) Semester—III (C.B.S.) Examination

BIOTECHNOLOGY (Metabolism)

Paper—I

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw structures and diagrams wherever necessary.

1. Describe glycolysis in detail. 10

OR

Write notes on :

(a) Regulation of glycolysis 5

(b) Gluconeogenesis. 5

2. Describe electron transport chain in detail. 10

OR

(a) Describe the structure of mitochondria. 5

(b) Explain the regulation of TCA cycle. 5

3. Describe in detail the β-oxidation of a saturated fatty acid. 10

OR

(a) Describe the synthesis of unsaturated fatty acids. 5

(b) Describe Ketoacidosis. 5

4. Describe in detail the pathways of pyrimidine biosynthesis. 10

OR

Write notes on :

(a) Transmethylation 2½

(b) Deamination 2½

(c) Disorders of urea cycle 2½

(d) Decarboxylation. 2½

5. Solve any ***ten*** of the following :

(i) What is the difference between hexokinase and glucokinase ? 1

(ii) Name one high energy compound other than ATP. 1

(iii) What is meant by redox potential ? 1

(iv) Why TCA cycle is amphibolic in nature ? 1

(v) What is meant by oxidative phosphorylation ? 1

(vi) What are cytochromes ? 1

(vii) Name two ketone bodies. 1

(viii) What is meant by omega oxidation ? 1

(ix) Name the components of fatty acid synthetase complex. 1

(x) Name any one disorder of urea cycle. 1

(xi) Give the linkage point of urea cycle and TCA cycle. 1

(xii) What is meant by salvage pathway ? 1