TKN/KS/16–5865

Fourth Semester B. Sc. Examination

MICROBIOLOGY

Paper – I

(Metabolism)

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw diagrams wherever necessary.

1. Explain in detail the metabolism of glucose by EMP pathway.

OR

Describe Kreb's cycle in detail. 10

2. (a) "Genetic code is triplet". Justify. 5

(b) Explain wobble hypothesis. 5

OR

(c) Describe initiation of protein synthesis. 5

(b) Explain elongation of polypeptide chain. 5

3. Explain energy flow through cyclic and non – cyclic photophosphorylation.

OR

Explain eukaryotic electron transport chain. 10

4. (a) Give the steps involved in β – oxidation of fats. $2\frac{1}{2}$

(b) What is role of RNA primer in DNA replication ? $2\frac{1}{2}$

(c) Give the function of incision enzyme, DNA unwinding enzyme and superhelix relaxing enzyme. $2\frac{1}{2}$

(d) Describe reverse transcription. $2\frac{1}{2}$

OR

(e) Explain rolling circle model. $2\frac{1}{2}$

(f) Describe various DNA polymerase enzymes. $2\frac{1}{2}$

(g) Give diagrammatic representation of transcription process. $2\frac{1}{2}$

(h) Write a note on omega oxidation. $2\frac{1}{2}$

5. Solve any **ten** :—

(i) What is catabolism and anabolism ? 1

(ii) Name the scientist who discovered ED pathway. 1

(iii) State the significance of pentose phosphate pathway. 1

(iv) What are Okazaki fragments ? 1

(v) Give the function of DNA ligase. 1

(vi) What is DNA template ? 1

(vii) What do you mean by Ketogenic amino acid ? 1

(viii) Define transamination. 1

(ix) Give the deamination of alanine. 1

(x) Define substrate level phosphorylation. 1

(xi) What are cytochromes ? 1

(xii) Write the reduced form of NAD and FAD. 1