NTK/KW/15 – 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. Describe in detail EMP pathway and its regulation. 10

OR

Describe in detail TCA cycle along with energetics. 10

2. Describe in detail β–oxidation. 10

OR

Define replication. Describe the process of prokaryotic replication. 10

3. (a) Discuss the deamination of alanine and tyrosine. 5

(b) Write a note on urea cycle. 5

OR

(c) Describe the initiation of translation process. 5

(d) Explain triplet codon, anticodon and degeneracy of codon. 5

4. (a) Write a note on cyclic photophosphorylation. $2\frac{1}{2}$

(b) Explain substrate level phosphorylation. $2\frac{1}{2}$

(c) Diagrammatically represent non–cyclic photophosphorylation. $2\frac{1}{2}$

(d) Write a note on cytochromes. $2\frac{1}{2}$

OR

(e) Give diagrammatic representation of Electron transport chain. $2\frac{1}{2}$

(f) Explain high energy molecules with any two examples. $2\frac{1}{2}$

(g) Discuss the events that take place in complex IV of ETC. $2\frac{1}{2}$

(h) Compare photophosphorylation and oxidative phosphorylation. $2\frac{1}{2}$

5. Solve any **ten** :—

(i) Why pentose phosphate pathway is known as HMP shunt pathway ? 1

(ii) What are the net outputs of pentose phosphate pathway ? 1

(iii) Give the significance of PK pathway. 1

(iv) What are transcription termination factors ? 1

(v) Define omegaoxidation. 1

(vi) What is reverse transcription ? 1

(vii) What are termination codons ? 1

(viii) What is transamination ? 1

(ix) What is P site ? 1

(x) What is ubiquinone ? 1

(xi) What is ATPase complex ? 1

(xii) What is P/O ratio ? 1