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KNT/KW/16/5150

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

MICROBIOLOGY (Metabolism)

Paper—I

Time : Three Hours] [Maximum Marks : 50

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

(2) Draw well labelled diagrams wherever necessary.

1. Describe TCA cycle and its regulation. 10

OR

Describe EMP Pathway and its regulation. 10

2. (a) Discuss rolling circle model for DNA replication. 5

(b) Discuss general features of transcription. 5

OR

(c) Discuss β-oxidation of palmitic acid. 5

(d) Discuss the types of DNA polymerase in DNA replication. 5

3. Describe Urea Cycle. 10

OR

Discuss salient features of genetic code. 10

4. (a) Explain substrate level phosphorylation with suitable example. 2½

(b) Discuss cyclic photophosphorylation. 2½

(c) Discuss ATP-ADP cycle. 2½

(d) Discuss energetics of oxidative phosphorylation. 2½

OR

(e) Describe sites of oxidative phosphorylation in ETC. 2½

(f) Discuss non cyclic photophosphorylation. 2½

(g) Write an account of high energy compounds in metabolism. 2½

(h) What is free energy ? How is it related to enthalpy and entropy ? 2½

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5. Solve any **TEN** questions :—

(i) What is amphibolic pathway ? 1

(ii) What is the role of transaldolase in HMP pathway ? 1

(iii) Give the key enzyme in ED pathway. 1

(iv) What is omega oxidation ? 1

(v) What is RNA primer ? 1

(vi) What is reverse transcription ? 1

(vii) What are glucogenic amino acids ? 1

(viii) What is the role of peptidyl transferase ? 1

(ix) What is deamination ? 1

(x) What is P : O ratio ? 1

(xi) What is redox potential ? 1

(xii) What is proton gradient ? 1

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