

NRT/KS/19/2117

Bachelor of Science (B.Sc.) Semester—IV Examination
MICROBIOLOGY (METABOLISM)
Optional Paper—I

Time : Three Hours]

[Maximum Marks : 50

Note :—(1) All questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. Why Pyruvate is called as key metabolite ? Give in detail Pyruvate formation by Glycolysis. 10

OR

- Describe the Krebs cycle in detail. 10
2. (a) Explain Rolling Circle Model of DNA Replication. 5
- (b) Describe β -oxidation of fatty acids. 5

OR

- (c) Illustrate the process of transcription with the help of diagrams. 5
- (d) Give the role of various enzymes in DNA replication. 5
3. (a) Write in detail on genetic code. 10

OR

- (b) Discuss prokaryotic translation process. 10
4. (a) Explain ATP generation process. 2½
- (b) What is substrate level phosphorylation ? Explain with an example. 2½
- (c) Explain non-cyclic photophosphorylation. 2½
- (d) What is oxidative phosphorylation ? 2½

OR

- (e) Describe cyclic photophosphorylation. 2½
- (f) What is phosphorylation ? 2½
- (g) Write a note on high energy molecules. 2½
- (h) Write a note on cytochromes. 2½
5. Solve any **TEN** questions :—
- (a) Give the significance of ED Pathway. 1
- (b) Define the term anabolism. 1
- (c) What does PK stand for ? 1
- (d) What are okazaki fragments ? 1
- (e) What is the role of RNA primer ? 1
- (f) What is the central dogma of protein synthesis ? 1
- (g) Define deamination. 1
- (h) Name any two glucogenic amino acids. 1
- (i) Give the significance of urea cycle. 1
- (j) Name one photosynthetic bacteria. 1
- (k) What does HTS stand for ? 1
- (l) What is dark phase of photosynthesis ? 1