



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 3rd Semester Examination, 2021

**CC5-MICROBIOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

1. Answer any **five** questions from the following: 1×5 = 5
  - (a) What is meant by anaplerotic reaction?
  - (b) What is the role of phycobilins?
  - (c) What is synchronous growth?
  - (d) Define chemolithotrophy.
  - (e) What is heterocyst?
  - (f) What is group translocation?
  - (g) Name one aerotolerant anaerobe.
  - (h) What is diauxic growth?
  
2. Answer any **three** questions from the following: 5×3 = 15
  - (a) What are the different uncouplers and inhibitors of ETC? 5
  - (b) Schematically represent the photosynthetic electron flow in purple bacteria. 5
  - (c) What are barophiles? Describe in brief microbial growth of photolithoautotroph with a suitable example. 1+4
  - (d) Describe in detail the heterolactic fermentation pathway. 5
  - (e) Define and explain hydrogen oxidation with a suitable example. 5
  
3. Answer any **two** questions from the following: 10×2 = 20
  - (a) Why PFK-1 is called a pacemaker enzyme? What are the components of respiratory chain? Describe substrate level phosphorylation with a suitable example. 2+5+3
  - (b) State the molecular adaptations in thermophiles, halophiles, acidophiles and osmophiles. 2½ ×4
  - (c) Compare and contrast between anaerobic respiration and aerobic respiration.
  - (d) State the role of nitrogenase in biological N<sub>2</sub>-Fixation. Give a brief account on dissimilatory nitrate reduction. 5+5

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