UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 2nd Semester Examination, 2021

CC3-MICROBIOLOGY

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

Answer any *four* of the following questions 10×4 = 40

1. Briefly describe the formation and factors responsible for the stability of alpha helix of protein. Explain the role of proteosome in deciding the fate of faulty unfolded protein. 6+4

2. Discuss about the Haworth projection formulae for glucose with its chair and boat forms. State about the different types of structural polysaccharides. 6+4

3. Write in detail about different types of storage and structural lipids. 10

4. Derive the Michaelis-Menten equation of enzyme activity. An enzyme is discovered that catalyze the following reaction 5+5

   SAD…….>HAPPY

   A team of motivated researchers set out to study the enzyme, which they call happyase. They found that the K_{cat} for happyase is 600/second. They carried out several experiments. When [Et]=20nM/second and [SAD]=40nM, the reaction velocity, V_0 is 9.6 micro mole/second. Calculate Km for the substrate SAD.

5. Give a detail account on structure and functions of hemoglobin. Explain the Bohr effect of CO_2 and pH on hemoglobin for oxygen affinity with graphical representation. 5+5

6. Give detail account of saponification of lipids and Ramachandran plot. 5+5

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