



**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 1st Semester Examination, 2020

**GE-MICROBIOLOGY**

Full Marks: 40

**ASSIGNMENT**

*The questions are of equal value.  
The figures in the margin indicate full marks.*

**The question paper contains GE-I, and GE-II. Candidates are required to answer any one from the two courses and they should mention it clearly on the Answer Book.**

**GE-I**

**Answer any four questions of the following**

10×4 = 40

1. Write about binomial nomenclature. Add a note on its advantages and drawbacks. 5+5
2. Discuss about the working principle of hot air oven with a suitable diagram. Write a short note on another technique that uses dry heat for microbial control. 7+3
3. Illustrate the structure of IgG. Compare between different classes of immunoglobulins. 5+5
4. Write about the contributions of Waksman and Jenner in the field of microbiology. 5+5
5. Elaborate the historical background and the conclusive experiment that led to disproof of the spontaneous generation. 10
6. Write a note on phase shift. Elaborate the working principle of phase contrast microscope with a ray diagram. 4+6

**GE-II**

**Answer any four questions of the following**

10×4 = 40

1. Discuss about pentose phosphate pathway with reference to microorganisms. Explain why it is called a HMP shunt adding a note to its significance. 6+4

2. Differentiate between homolactic acid and heterolactic acid fermentation. How is alcohol fermentation different in *Saccharomyces cerevisiae* and *Zymomonas mobilis*? 5+5
3. Establish the selective permeability of cell membrane in light of the membrane transport system. 10
4. Discuss about the molecular mechanism of methanogenesis. Add a note on the significance of the process. 7+3
5. Write about Z scheme in details. Add a note on photosynthetic pigments. 5+5
6. Discuss about the energy metabolism of *Thiobacillus ferrooxidans*. 10

—x—