



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 4th Semester Examination, 2021

SEC1 (P2)-MICROBIOLOGY (3 & 4)

Full Marks: 60

ASSIGNMENT

The figures in the margin indicate full marks.

The question paper contains SEC-3 & SEC-4. The Candidates are required to answer any *one* from the *two* papers. Candidates should mention it clearly on the Answer Book.

SEC-3: MICROBIAL DIAGNOSIS IN HEALTH CLINICS

Answer any six of the following

10×6 = 60

1. Two bacterial samples are there- *Staphylococcus aureus* and *Streptococcus pneumoniae*. Which culture media would you choose to identify and distinguish these two bacteria? Explain describing the colony morphology of both the bacteria on that media and describe its preparation method. 5+5
2. Describe the process of collection of CSF and Fecal sample. What general precautions to be followed while collecting clinical samples? 5+5
3. Describe the working principle behind one of the rapid testing kit used for detection of Dengue. 10
4. Describe the process and principle of Giemsa staining for detection of malarial parasites. 10
5. How will you determine whether a patient has recovered or is currently suffering from typhoid fever with the help of agglutination reaction? Describe the process in detail. Describe passive agglutination. 6+4
6. Device an experiment to determine the MIC of an antibiotic. 10
7. Write down the working principle of a test kit used for rapid detection of typhoid. 10
8. Describe the staining mechanism of Gram stain and Ziehl-Neelsen staining for *Mycobacterium tuberculosis*. 5+5

SEC-4: FOOD FERMENTATION TECHNIQUES

Answer any six of the following

10×6 = 60

1. Write down the detailed process for the preparation of cheese with mentioning the microbiological changes occurring during the process. 10
2. Write down the role and health benefits of microorganisms involved in the fermentation of idli. 10
3. Describe the detailed process of preparation of a fermented food made from vegetable. 10
4. Explain the microbial changes occurring during the fermentation of yogurt. 10
5. What are fermented foods? Describe with flow diagram the process for bread making. 3+7
6. Describe the health promoting effects of probiotics. 10
7. Describe the role of Lactic Acid Bacteria in the production of milk based fermented food. 10
8. Describe the detailed process of preparation of a fermented food made from fish. 10

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