

B.Sc. CBCS Pattern Semester-I
BIO-02 - Biotechnology Paper-II (General Microbiology)

P. Pages : 2

Time : Three Hours



GUG/W/23/11563

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw diagrams wherever necessary.

1. Discuss the contribution of scientists in the field of microbiology. **10**
a) Louis Pasteur.
b) Robert Koch.

OR

- a) What are mechanical parts of compound light microscope? **2½**
b) Draw a well labelled ray diagram of dark field microscopy. **2½**
c) Discuss comparison between optical and electron microscope. **2½**
d) Write applications of fluorescent microscopy. **2½**
2. Describe general characteristics of Archaea and differentiate between bacterial and archaeal cell membrane. **10**

OR

- a) Explain role of flagella and Pili in bacteria. **2½**
b) Add a note on different kinds of plasmids. **2½**
c) Describe the structure of endospore with the help of diagram. **2½**
d) Differentiate between Gram positive and Gram negative cell wall. **2½**
3. What is differential staining? Explain in detail gram staining and mechanism. **10**

OR

- a) Add a note on different symmetries of viruses. **2½**
b) Give brief idea of lysogeny. **2½**
c) Describe the industrial importance of moulds. **2½**
d) Write classification of stains with suitable example. **2½**

4. Explain in detail chemostat and Turbidostat as continuous culture apparatus. 10
- OR**
- a) Write any two methods for preservation of pure culture. 2½
- b) Explain autotrophs and heterotrophs. 2½
- c) Differentiate between logarithmic growth phase and logarithmic death phase. 2½
- d) Classify bacteria on the basis of pH. 2½
5. Solve **any ten**.
- a) Who is father of vaccination? 1
- b) What is the source of illumination in electron microscope. 1
- c) Write any two applications of SEM. 1
- d) Give the unit for measurement of bacterial size. 1
- e) What is chromatin material? 1
- f) Give the significance of germination of endospore. 1
- g) What is mode of reproduction in yeasts? 1
- h) What are dyes? 1
- i) Which stains are used in flagella staining? 1
- j) How radiation kills bacteria? 1
- k) What are mesophiles? Give example. 1
- l) What is synchronous culture. 1
