

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

P. Pages : 2

Time : Three Hours



**GUG/S/23/11563**

Max. Marks : 50

1. Describe in detail about principle and application of Dark field and fluorescent microscopy. **10**

**OR**

- a) Write contribution of Louis Pasteur ? **2½**
- b) Explain numerical aperture and its importance. **2½**
- c) Compare optical and electron microscope. **2½**
- d) Write contribution of Edward Jenner ? **2½**
2. What are Archae ? Compare Archaeal and bacterial cell membrane and also write general characters of Archae. **10**

**OR**

- a) What are plasmids ? Describe conjugative and non-conjugative plasmids. **2½**
- b) Describe structure of flagella and Pilli ? **2½**
- c) Explain general structure of gram positive and gram negative cell wall ? **2½**
- d) Describe various shapes of Bacteria. **2½**
3. Describe in detail about general characters of viruses, structure, shape and symmetries of viruses. **10**

**OR**

- a) Explain Lysogeny cycle of viruses ? **2½**
- b) Describe general characters and importance of Molds and Protozoa. **2½**
- c) Describe Endospore and flagella staining. **2½**
- d) Explain Lytic cycle of viruses ? **2½**
4. What is pure culture of bacteria ? Describe synchronous, continuous and batch culture ? **10**

**OR**

- a) Explain physical control methods for micro organisms ? **2½**
- b) Describe isolation and maintenance of pure culture ? **2½**

c) Explain growth curve of bacteria ? 2½

d) Write short note on basic nutritional requirement of bacteria. 2½

**5.** Solve **any ten** questions. **10**

i) What is objective lens ?

ii) What is resolving power of microscope?

iii) Who discovered penicillin?

iv) What is Endospore ?

v) What are chromatid ?

vi) What is Pilli ?

vii) What are yeasts ?

viii) What is counter staining ?

ix) Crystal violet used for ?

x) What is turbidostat ?

xi) What are germicide ?

xii) Define preservation ?

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