

Unique Paper Code (UPC)	:	32531102
Name of the Paper	:	Bacteriology
Name of Course	:	B.Sc. (Hons.) Microbiology
Semester	:	1
Maximum Marks	:	75
Duration	:	4 hrs including time taken for downloading question paper and uploading answer sheets

Instructions to Candidates

On first page, please write the following details:

1. Date and time of examination (DD/MM/YYYY, Hours:Min)
2. Examination Roll Number
3. Name of the Program, i.e. B.Sc. (H) Microbiology
4. Semester
5. Unique Paper Code (UPC)
6. Title of the Paper
7. Name of the College
8. Email ID of the student
9. Mobile Number of the student

Set 1

Attempt any four questions. All questions carry equal marks

Q1. What is a batch culture? With the help of a suitable diagram explain various phases of growth curve for bacteria growing in a batch culture. Discuss various methods for culturing of anaerobes. Explain the importance of culture collection and name any two microbial culture collection centers. Give an example of giant bacterium. What is pseudomurein?

2+6+5+3+1+1.75

Q2. What is polyphasic taxonomy? Discuss the advantages of using small subunit (SSU) rRNA genes in taxonomy? Describe salient features and importance of *Sulfolobus*, *Streptomyces*, *Myxococcus* and *Bacillus*.

1.75+5+ (3x4)

Q3. Describe various nutritional categories of bacteria. Differentiate between complex and synthetic media with the help of suitable examples. Discuss any two methods of obtaining pure cultures along with their advantages and disadvantages. Name any algal source of agar-agar and mention the characteristics that make it suitable for bacteriological culture media.

6+4+6+2.75

Q4. What is the function of cell wall and mesosome? Differentiate between the cell walls of Gram-positive and Gram-negative bacteria citing two examples of each type of bacteria. Compare the modes of action of lysozyme and penicillin on the bacterial cell wall. Discuss the characteristic features of Mycoplasma.

2+6+4+4+2.75

Q5. What are plasmids and episomes? Name any three types of bacterial plasmids and mention their respective function. Describe various arrangements of flagella on a bacterial cell. Discuss the salient features of genus *Bdellovibrio*. Mention any three methods of asexual reproduction in bacteria.

2+6+4+4+2.75

Q6. What is glycocalyx? Explain various advantages of capsule citing suitable examples. Diagrammatically explain the formation of endospores in bacteria. Comment on the ecological and economic importance of bacteria. Differentiate between resolving power and magnification of a microscope.

2+4+5+5+2.75