

B.Sc. F. Y. (CBCS Pattern) Semester-I
USBCT-C02 - Biochemistry Paper-II - General Microbiology and Virology

P. Pages : 2

Time : Three Hours



GUG/S/25/11541

Max. Marks : 50

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

1. i) Describe the cell wall structure of Gram-positive bacteria in detail. **5**
ii) Describe the cell wall structure of Gram-negative bacteria in detail. **5**

OR

- a) Draw a well labelled diagram of flagella. **2½**
b) Write a note on conjugate and non-conjugate plasmids. **2½**
c) Discuss the process of formation of endospore. **2½**
d) Write a note on different shapes and sizes of bacteria. **2½**
2. What is differential staining? Explain the principle and technique of Gram staining. **10**

OR

- a) What are the different stages of lysogenic life cycle of λ phage? **2½**
b) Write a short note on lytic cycle. **2½**
c) Draw a well labelled diagram of TMV. **2½**
d) Write a note on chromophore and auxochrome. **2½**
3. i) Classify microorganisms on the basis of gaseous requirements. **5**
ii) Classify microorganisms on the basis of hydrogen ion concentration. **5**

OR

- a) Explain the working of Chemostat. **2½**
b) Write a note on Turbidostat. **2½**
c) Discuss the selection of bacteria by size & age process in synchronous culture. **2½**
d) Describe any one method for total cell count. **2½**

4. Describe in detail the basic nutritional requirements of microorganisms. 10

OR

- a) Write a short note on chemotrophs. 2½
- b) Explain the importance of temperature as microbial control method. 2½
- c) How are halogens utilized for microbial control? 2½
- d) What is the role of sulphonamides as chemotherapeutic agent? 2½

5. Answer **any ten** of the following: 1x10

- a) Define the term-incineration.
- b) Define the term-Preservative
- c) State any two heavy metals utilized for microbial control.
- d) Define generation time.
- e) What is growth rate?
- f) What happens during stationary phase of growth curve?
- g) The primary stain used in acid-fast staining is -----
- h) Define stain
- i) What are chromogen?
- j) Write any single point of difference between episome and plasmid.
- k) Write any one function of capsule.
- l) What are the different classes of plasmids?
