

USBCT-C02 - Biochemistry Paper-II (General Microbiology and Virology)

P. Pages : 2

Time : Three Hours



GUG/W/23/11541

Max. Marks : 50

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

1. Describe in detail the structure of endospore. Explain the process of its formation. Add a note on basis of its resistance. **10**

OR

- a) Draw a generalized diagram of a typical bacterial cell. **2½**
- b) Write a note on R-Plasmid. **2½**
- c) Discuss in brief - the structure of gram negative cell wall. **2½**
- d) Write a note on structure and function of capsule. **2½**
2. Describe the following life cycles of viruses in detail- **10**
- i) Lytic cycle.
- ii) Lysogenic cycle

OR

- a) Explain the technique of Gram Staining. **2½**
- b) Write a note on Tobacco Mosaic Virus (TMV). **2½**
- c) Explain chromophore and auxochrome with suitable examples. **2½**
- d) Briefly describe the principle and technique of Acid fast staining. **2½**
3. What is synchronous culture? Describe the methods of obtaining synchronous culture. **10**

OR

- a) Classify microorganisms on the basis of temperature requirements for growth.
- b) Write a note on turbidostat.
- c) Draw a well labelled diagram of chemostat.
- d) Explain the plate count method for measurement of growth.

4. Explain the various chemical methods for microbial control. **10**

OR

- a) Write the role of antibiotics as chemotherapeutic agents. **2½**
- b) How temperature is useful as a microbial control method? **2½**
- c) Write a short note on chemotrophs. **2½**
- d) Write the importance of water, carbon and nitrogen as basic nutritional requirements. **2½**

5. Attempt **any ten** of the followings: **10**

- a) What are colicins?
- b) Define episomes.
- c) What are conjugate and nonconjugate plasmids?
- d) Define chromogen.
- e) Define mordant.
- f) What is retrovirus?
- g) Define generation time.
- h) What is meant by facultative anaerob?
- i) What are alkaliphiles?
- j) What are sulphonamides?
- k) State any single difference between disinfectant and antiseptic.
- l) Define phototrophs.
