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

P. Pages : 2

Time : Three Hours

GUG/S/23/11541

Max. Marks : 50

1672

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

1. Describe in detail the cell wall structure of Gram + and Gram - bacteria. **10**

OR

a) Draw a well labeled 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) Describe the general characteristic of viruses. **2½**

c) Write a note on chromophore and auxochrome. **2½**

d) Draw a well labelled diagram of bacteriophage. **2½**

3. Describe a typical bacterial growth curve. **10**

OR

a) Write a note on Chemostat. **2½**

b) Discuss the selection of bacteria by size & age process in synchronous culture. **2½**

c) Classification of microorganisms on the basis of gaseous requirement. **2½**

d) Describe any one method for total cell count. **2½**

4. Describe in detail the basic nutritional requirement of microorganisms. **10**

OR

a) "Antibiotics affect cell wall synthesis" Explain. **2½**

b) Write a short note on chemotrophs. **2½**

c) Describe the role of radiations as antimicrobial agent. **2½**

d) Describe the role of heavy metals in microbial control. **2½**

5. Solve **any ten** of the following. **10x1**

a) Name one endospore forming bacteria.

b) What is a capsule?

c) What is fimbriae?

d) Name one acid fast bacterium.

e) What is dye?

f) Define auxochrome.

g) Define generation time.

h) What is pure culture.

i) State any two heavy metals utilized for microbial control.

j) Define the term - incineration.

k) Define generation time.

l) Define the term - Preservative.

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