

Bachelor of Science (B.Sc.) First Semester
BIO-02 - Biotechnology Paper-II (General Microbiology)

P. Pages : 2

Time : Three Hours



GUG/W/18/1221

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Give the detail account on principle and applications Bright field microscopy. 10

OR

Draw a well labelled. Diagram of typical bacterial cell and describe the structure.

2. Draw the icosahedral symmetry of the virus and explain the structure. 10

OR

Write different methods of pure culture isolation.

3. a) Describe Koch's postulates. 2½
b) Write in short note on endospore formation. 2½
c) Give brief idea of lytic cycle. 2½
d) Write names of different phases of growth curve. 2½

OR

- e) Draw a well labelled ray diagram of dark field microscopy. 2½
f) Differentiate between bacterial and archaea cell membrane. 2½
g) Describe the method of endospore staining. 2½
h) Describe the concept of sterilization and disinfection. 2½
4. a) Explain the principle and applications of electron microscopy. 2½
b) Give general account on pilli in bacteria. 2½
c) Describe the steps of Gram staining. 2½
d) Describe the working of chemostat. 2½

OR

- e) Write applications of fluorescent microscopy. 2½
f) Write different shapes in bacteria. 2½

g) Write general characters of viruses. 2½

h) Write composition of nutrient agar and nutrient broth. 2½

5. Attempt any ten.

a) Who discovered vaccination. 1

b) Write contribution of Robert Koch in microbiology. 1

c) Which oil is used for oil immersion lens. 1

d) What is the size of bacteria. 1

e) Write the function of chromatin material. 1

f) Define plasmid? 1

g) Write two general characters of moulds. 1

h) Give examples of basic stain. 1

i) What is lytic cycle in viruses. 1

j) Define continuous culture. 1

k) What is lyophilization? 1

l) Differentiate bacteria on the basis of energy required for growth. 1
