0102E1292

Candidate's Seat No :_____

MSc Sem.-1 Examination

401

Bio-Technology

Time : 2-30 Hours] **February-2025** **[Max. Marks : 70**

Q.1. Discuss the ultrastructure of bacterial cell walls with a neat labelled diagram and write its function. **14**

OR

Q.1. (A) Write a concise note on basic techniques used to study microorganisms. **07**

(B) Write a detailed note on Bergey's manual of systematic bacteriology. **07**

Q.2. Explain the structure and function of the nucleus and endoplasmic reticulum. **14**

OR

Q.2. (A) What is endosymbiont theory? Explain it in detail and give its importance. **07**

(B) Explain the structure of the Golgi apparatus and write its function. **07**

Q.3. Describe the major checkpoints found in the eukaryotic cell cycle in detail. **14**

OR

Q.3. (A) Discuss types of cytosis with their key factors of regulation. **07**

(B) Write a comparison between intrinsic and extrinsic pathways of apoptosis. **07**

Q.4. Describe the role of fungi as commercial producers of pharmaceuticals and enzymes. **14**

OR

Q.4. (A) Write a note on algae and their role in biotechnology. **07**

(B) Give an overview of deuteromycetes. **07**

Q.5. Write 1-2 line answers to **any seven** of the following **14**

a. What is a bacterial capsule? Write its primary function.

b. Write various arrangements of bacterial flagella.

c. What is the resolving power and numerical aperture of a microscope?

d. Where is 5.8S rRNA precisely located, and in which form?

e. What is the function of lysosomes?

f. What is the role of vacuoles in plant cells?

g. What is necrosis?

h. What is the composition of ganglioside?

i What is the contribution of Singer and Nicolson in cell biology?

j. Give the names of algae and bioactive compounds produced from them.

k. Enlist the role of protozoa in biotechnological applications.

l. Give types of basidiospores and differences in each.

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