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B.Sc. (Sem.- II) Examination April - 2026

Microbiology (Paper - MB -MJ-202)

Bacterial and Archaeal Cell Structure and Function

Time: 1:30 Hours] **[Total Marks: 38**

સૂચના : / Instructions
(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
(2) Figures to the right indicate full marks of the question.
(3) Draw neat and labelled diagrams whenever necessary.

Seat No.:

Student's Signature

Q.1. Give Specific answers (Any Eight): **08**
a. Differentiate between capsule and slime layers.
b. What is the function of nucleoid associated proteins (NAP) in bacteria?
c. Which molecule has lowest permeability rate to enter through cell membrane?
d. Which lipid is present in archaeal cell membrane?
e. Name the largest known bacterium?
f. What is the primary function of gas vesicles?
g. State the importance of teichoic acids.
h. What is a peritrichous flagellar arrangment?
i. Define: Scotophobotaxis.

Q.2. Explain (any TWO) of the following: **10**
a. Explain in detail about the characteristics of endospores. Discuss about the germination process of endospore.
b. Write a note on magnetic storage inclusions.
c. Discuss about the structure and function of Ribosomes.

Q.3. Explain (any TWO) of the following: **10**
a. Archaea has unique cell wall structure.
b. The outer membrane of gram negative bacteria.
c. The biochemistry of peptidoglycan of bacteria with a diagram.

Q.4. Explain (any TWO) of the following: **10**
a. Gliding motility in bacteria.
b. Pili and fimbriae have many functions.
c. The chemotaxis in peritrichous and polary flagellated bacteria.