

RAN-2503000502026003 / 2403000502026001
F. Y. B. Sc. (Sem. - II) Examination October - 2025
Microbiology (Paper - IV) Theory (MB-MJ-202)
Bacterial and Archaeal Cell Structure and Function
Time: 2 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.:

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Student's Signature

Q. 1. Give Specific answers (Any Eight): (08)

- a. Which is the largest known bacterium?
- b. Which organelle is involved in horizontal gene transfer in prokaryotes?
- c. Define S-layer.
- d. Name the acidic substance found in gram positive bacterial cell wall.
- e. Which protein complex drives the rotation of flagellum?
- f. Define gliding motility.
- g. Which is an example of the bacterium having cylindrical shape?
- h. Which porin protein facilitates the export and import of water in *Escherichia coli*?
- i. Write the function of Magnetosomes.

Q. 2. Explain any ONE of the following: (10)

- a. What is Endospore? Write a detailed note on endospore structure.
- b. Write a note on carbon storage inclusion bodies in prokaryotes.

Q. 3. Explain any TWO of the following: (10)

- a. Discuss the archaeal cell wall in detail.
- b. How does the Cell wall of Gram positive bacteria differ from that of Gram negative bacteria?
- c. Discuss about various functions of bacterial cell membrane.

Q. 4. Explain any TWO of the following: (10)

- a. Elaborate the structure of bacterial flagella with diagram.
- b. Write a note on chemotaxis.
- c. Discuss the mechanism of gliding motility