

3 SEM TDC BOT M 3

2021

(March)

BOTANY

(Major)

Course : 303

(Microbiology and Biotechnology)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. (a) Fill in the blanks : 1×3=3
- (i) The cell wall of bacterium is made up of _____.
- (ii) The endophytic cyanobacterium in the cavity of Azolla is _____.
- (iii) The Bt-toxin is produced by the bacterium _____.
- (b) Choose the correct answer of the following : 1×3=3
- (i) Inoculation of pure culture is done inside incubator/laminar airflow/hot air oven.

(Turn Over)

- (ii) The solidifying agent in a PDA medium is potato/dextrose/agar-agar.
- (iii) Gram's stain is a fungal/bacterial/algal stain.
- (c) Write short notes on the following : 2½×4=10
- (i) Autoclave
 - (ii) Cyanobacteria
 - (iii) Totipotency
 - (iv) PDA medium

2. Explain with diagrams the mechanism of conjugation, transformation and transduction during reproduction in bacteria. 4+3+3=10

Or

Discuss the symptoms and control measures of any one human disease caused by bacteria or virus mentioning the causal organism. 4+5+1=10

3. Define biotechnology. What are the tools of genetic engineering? Describe the different steps of genetic engineering. 2+2+6=10

Or

Describe the different steps of tissue culture. Mention the importance of tissue culture. 8+2=10

4. Write short notes on any *three* of the following : 4×3=12

- (a) Antibiotics and human welfare
- (b) Significance of mycorrhiza
- (c) Biopiracy
- (d) Protoplast fusion
- (e) Food poisoning
