

2016

M.Sc.

1st Semester Examination

BOTANY

PAPER—BOT-101

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

(Microbiology)

Answer Q. No. 1 and 2 and any two from the rest.

1. Answer any five questions from the following : 2×5
 - (i) What is active artificial immunity? Give an example.
 - (ii) What are meant by 'pmons'? Name a disease caused by them.
 - (iii) Mention two important differences between Archaea and Eubacteria.

(Turn Over)

- (iv) Explain why obligate anaerobic microorganisms cannot tolerate molecular oxygen.
 - (v) Write down four importance of capsule in bacteria.
 - (vi) What is skin prick test?
 - (vii) What is 'novel rot'? Mention its causal organism.
2. Write short notes on any *four* of the following : $2\frac{1}{2} \times 4$
- (i) ED Pathway.
 - (ii) Interferon.
 - (iii) ELISA.
 - (iv) Continuous culture.
 - (v) Nitrogenase.
 - (vi) Bacterial flagella.
3. (a) Compare natural transformation system of Gram(+) bacteria with Gram(-) bacteria.
- (b) State the cultivation process of plant viruses.
- (c) What is magnetotaxis? Write its utility in bacteria.
- 4+4+(1+1)

4. (a) What is monoclonal antibody? How is monoclonal antibody produced in laboratory condition?
- (b) Briefly describe the molecular mechanism of lysogeny in λ (lambda) - phage in *E.coli*.
- (c) Describe Helmstetter-Cummings experiment for obtaining synchronous growth of bacteria.

(1+3)+3+3

5. (a) Write the detailed structure of bacterial endospore.
- (b) Describe the process for municipal waste water treatment.
- (c) What is bioplastic? Give example.
- (d) During Log-phase growth of a bacterial culture, a sample is taken at 8:00 A.M. with 1,000 cells per milliliter and second sample was taken at 5:54 P.M. with 10,00,000 cells per milliliter. Calculate the generation time of that bacteria in hour.

2+3+(1+1)+3
