

**2013**

**M.Sc.**

**1st Semester Examination**

**BOTANY**

**PAPER—BOT-104**

*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.*

***Use separate answerscripts for each unit.***

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

1. Answer any ten questions from the following : 2X10
- (a) Mention the site of occurrence of teichoic acid. State its function.
  - (b) What is triple vaccine ?
  - (c) What is acid fastness ? Give an example of acid fast bacteria.
  - (d) Name the causal organism of gonorrhoea and Q fever.

*(Turn Over)*

- (e) What is plaque assay ?
  - (f) What is toxoid ? Give example.
  - (g) What is hop ?
  - (h) Define mycoplasma. Give example.
  - (i) Name one each of a green sulfur bacteria and a purple sulfur bacteria.
  - (j) What is the raw material used in SUFU preparation ? Mention the name of the microorganism involved in the process.
  - (k) Mention the field of contributions of (i) Louis Pasteur and (ii) Paul Enrich in the development of microbiology.
  - (l) Name one non-leguminous symbiotic nitrogen fixer. What is its host ?
  - (m) What is interferon ?
  - (n) Write down the mode of action of sulfa drugs.
  - (o) What is magnetosome ?
2. Write short notes on any *four* of the following :  $2\frac{1}{2} \times 4$
- (a) Anaerobic culture.
  - (b) Bioplastic.
  - (c) Basal body of bacterial flagella.
  - (d) Sweet dessert wine.
  - (e) Application of genetic engineering in health care.
  - (f) Synthronous culture.

3. (a) Write down the process of cultivation of plant viruses.  
(b) Schematically present E. D. pathway.  
(c) Write down mechanism of action of penicillin in bacteria.  
(d) State the difference between sterilization and pasteurization.
4. (a) What is interrupted mating experiment? How bacterial gene maps are prepared with this technique? 1+4  
(b) What is monoclonal antibody? How is monoclonal antibody produced in laboratory condition? 2+3
5. (a) Describe Helmestetter-Cummings's technique for obtaining synchronous growth of bacteria.  
(b) Mention four non-medical use of antibiotic.  
(c) Briefly describe the molecular mechanism of lysogeny in  $\lambda$ -phage.  
(d) Compare passive immunity with active immunity. 3+2+3+2
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