

**2017**

**M.Sc.**

**1st Semester Examination**

**BOTANY**

**PAPER—BOT-101**

**Subject Code—23**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the 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 all questions.

1. Answer any five of the following :

2×5

(a) What is interferon ?

*(Turn Over)*

- (b) What is plaque assay ?
- (c) What is triple vaccine ?
- (d) Name the organisms responsible to cause diphtheria and tetanus.
- (e) Why moist heat is more effective than dry heat for sterilization ?
- (f) Differentiate antiseptics and disinfectants.
- (g) Mention the contributions of
  - (i) Louis Pasteur and
  - (ii) Joseph Lister in microbiology.
- (h) What are Hfr strains ? How do they differ from F<sup>+</sup> strains ?

2. Answer any *two* of the following :

5×2

- (a) Write short notes on :
  - (i) ED pathway and
  - (ii) Generalized transduction.
- (b) With the help of a flowchart discuss the production process of beer.
- (c) Discuss on complement fixation test.

3. (a) Answer any *two* of the following : 10×2
- (i) How would you develop a synchronous culture of bacteria ?
  - (ii) What is magnetosome ? Mention its function. :
  - (iii) How the animal viruses are cultivated ?  
4+2+4
- (b) (i) Discuss six-kingdom concept as proposed by Carl Woese.
- (ii) What is oxygen toxicity ?
  - (iii) Write down the different ways for enumeration of bacteria in culture. 4+2+4
- (c) (i) What is resolving power of a microscope ? How resolving power is restricted by numerical aperture and wavelength of visible light ?
- (ii) What is interrupted mating experiment ?
  - (iii) Briefly discuss the molecular mechanism of lysogeny in  $\lambda$ -phage. (2+2)+3+3

- (d) (i) Write down the structure of IgG.
- (ii) How is monoclonal antibody produced ?
- (iii) Discuss about the process for microbiological analysis of water. 3+4+3
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