

# MK-115

April-2018

B.Sc., Sem.-I

## CC-3-101 : Microbiology (Introduction to Microbial World)

Time : 3 Hours]

[Max. Marks : 70

- Instructions :**
- (1) All questions carry equal marks.
  - (2) All questions are compulsory.
  - (3) Figures on right indicates marks.
  - (4) Draw diagrams wherever necessary.

1. Answer the following : (any two) 14
  - (a) Write a note on the discovery of viruses.
  - (b) Discuss the contribution of Louis Pasteur and John Tyndall in the favour of biogenesis.
  - (c) What is vaccination ? Discuss the discovery and development of vaccines.
  - (d) Explain the major developments in the field of soil microbiology.
  
2. Answer the following : (any two) 14
  - (a) Explain the distribution of micro-organisms in natural habitats.
  - (b) Draw a typical bacterial cell and discuss the most common shapes of bacteria.
  - (c) Discuss the distinctive features of fungi.
  - (d) Write a descriptive note on acellular organisms.
  
3. Answer the following : (any two) 14
  - (a) Discuss the branches of Microbiology.
  - (b) What is genetic engineering ? Give a brief outline of gene manipulation technique.
  - (c) Explain streak plate method for isolation of pure culture.
  - (d) Discuss chemical methods for selective isolation of bacteria.
  
4. Answer the following : (any two) 14
  - (a) Discuss the principle and applications of fluorescent microscopy.
  - (b) Write a descriptive note on electron microscopy.
  - (c) Explain in brief : Chemistry of dyes and stains.
  - (d) Discuss Gram staining with importance of each step.



5. Answer in one word/**one** or **two** lines :

14

- (1) Write contribution of Paul Ehrlich.
- (2) Name the causative agent of anthrax.
- (3) Define : Pure culture.
- (4) Give any two examples of antibiotics.
- (5) What are Halophiles ?
- (6) Write any two significances of algae.
- (7) Name the locomotory organs of protozoa.
- (8) Peptidoglycan occurs as a major unit in the cell wall of \_\_\_\_\_.
- (9) What are lichens ?
- (10) What is BT ? Which organism produces it ?
- (11) Name any two culture collection centres.
- (12) What is the temperature of liquid nitrogen ?
- (13) Numerical aperture, NA= \_\_\_\_\_.
- (14) Name one acidic dye and one basic dye.  
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