



HDS-003-001111

Seat No. _____

First Year B. Sc. (Sem. I) (CBCS) Examination

November / December – 2017

Microbiology : Paper - MB-101

(Fundamentals of Microbiology)

Faculty Code : 003

Subject Code : 001111

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory
(2) Draw a diagram wherever necessary
(3) Figures in the right indicate marks.

1 Answer the following : 20

- (1) Who proposed the term protista? What are protista?
- (2) Enlist major groups of microbes.
- (3) How microbiology field is useful in food microbiology?
- (4) Who observed microorganisms in the drop of rain water for the first time?
- (5) List Koch's Postulates,
- (6) List the three types of electron microscopes.
- (7) Define the term "Resolution".
- (8) Write the function of immersion oil.
- (8) Which microscopic technique is used to see three dimensional surface of structure?
- (10) Define Numerical aperture.
- (11) Define Chromophore. Give one examples.
- (12) What is a Decolourizer? Give one examples.
- (13) Name two acidic and two basic stains.
- (14) Give two examples of non-biological uses of stains.

- (15) Define the term "Disinfectant".
- (16) List the four types 'of damages caused by antimicrobial agents.
- (17) Give the fullform of TDT and DRT.
- (18) List different shapes found in bacteria.
- (19) List four functions of bacterial capsules.
- (20) List four functions of cell membrane.

- 2** (A) Answer in short : (Any 3) **6**
- (1) Write any five contribution of Louis Pasteur in field on microbiology.
 - (2) Describe fungi as major group of microorganisms.
 - (3) Which factors affect the resolution of microscope ?
 - (4) Define Stains. How does it differ from dyes?
 - (5) Write on Dessication as an physical agent to control microorganisms.
 - (6) Define: Bacterial cysts.
- (B) Answer in brief : (Any 3) **9**
- (1) Write on Five Kingdom Classification System.
 - (2) Describe the contribution of Alexander Fleming, Carl Woese and Joseph lister.
 - (3) Write a note on: Dark Field Microscopy.
 - (4) Compare and contrast: Natural stains and Synthetic stains.
 - (5) Discuss the mode of action of UV radiations
 - (6) Compare and contrast cell wall of gram positive and gram negative bacteria.
- (C) Write short note on : (Any 2) **10**
- (1) Write on Needham" and Spallanzani's experiment.
 - (2) Describe the working and principle of Fluorescence microscopy.
 - (3) Discuss in detail classification of biological stains.
 - (4) Write on the mechanism of Gram staining.
 - (5) Enlist the examples of antibiotic affecting protein synthesis along with their mode of action.

- 3** (A) Answer in short : (Any **3**) **6**
- (1) Write Ion division - Tenericute,
 - (2) Define Immunology.
 - (3) Write the principle of autoclave.
 - (4) Write the Function of mordants used in staining technique.
 - (5) What are bactericides? Give their examples.
 - (6) What is pilli? Write its functions.
- (B) Answer in brief : (Any **3**) **9**
- (1) Write on Exomicrobiology.
 - (2) Discuss characteristic of an ideal antimicrobial chemical agents.
 - (3) Discuss the general properties of Light.
 - (4) What are mesosomes? Give their functions.
 - (5) Discuss chemical structure of stains.
 - (6) Explain Protoplast.
- (C) Write short note on : (Any **2**) **10**
- (1) Germ theory of diseases.
 - (2) Write on spore formation of bacteria.
 - (3) Discuss in detail Light Microscope.
 - (4) Write on physical and chemical theories of staining.
 - (5) Explain in detail antibiotic affecting cell wall synthesis'.
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