



GDB-1207

Seat No. _____

B. Sc. (Sem. I) Examination

January - 2016

Microbiology - MB-01

(Fundamentals of Microbiology)

Time : 3 Hours]

[Total Marks : 70

1 Answer the following MCQs. : **10**

- (1) Who first discovered Penicillin Antibiotic ?
 - (A) Robert Koch
 - (B) Selmann Waksman
 - (C) Alexander Fleming
 - (D) Louis Pasteur
- (2) Which of the following is the example of Halogens ?
 - (A) β -Propiolactone
 - (B) Formaldehyde
 - (C) Chlorine
 - (D) Ethylene Oxide
- (3) Which of the following instrument used for Air Sterilization ?
 - (A) Incubator
 - (B) Laminar Air Flow
 - (C) Autoclave
 - (D) Hot Air Oven

- (4) Which of the following is a method for cultivation of Anaerobes ?
- (A) Roll tube tech.
 - (B) Spread Plate tech.
 - (C) Pour Plate tech.
 - (D) Serial dilution tech.
- (5) Which of the following is the example of Instrument based on "Dry Heat Sterilization" ?
- (A) Rotary Shaker
 - (B) Centrifuge
 - (C) Refrigerator
 - (D) Hot Air Oven

2 Answer any seven short questions from the following :

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- (i) Mention the full form of ZNCF.
- (ii) Define : Chemotherapy, Antibiotic.
- (iii) How will you sterilize Amino acids solution ?
- (iv) Give few examples of Gram Negative bacteria.
- (v) Define : Pasteurization.
- (vi) Enlist various examples of fumigents used as chemical disinfectant.
- (vii) What are different methods used for preservation of bacteria ?
- (viii) Mention the principle of Monochrome Staining.
- (ix) Give some examples of selective and special media.
- (x) Define : cell wall, capsule.

3 Answer any four questions from the following : 12

- (i) Explain the contribution of Robert Koch and Iwanowsky.
- (ii) Discuss the principle and applications of Phase-contrast microscopy.
- (iii) Preservation of Microorganisms by liquid nitrogen.
- (iv) Explain the mode of action and practical applications of Alcohol and Alcoholic compounds.
- (v) Importance of microbes in the Agricultural field.
- (vi) U.V. as a physical sterilizing agent.

4 Discuss any four questions in brief : 16

- (i) Bright Field Microscopy.
- (ii) Koch Postulate's.
- (iii) Hot Air Oven : Principle, construction and its applications.
- (iv) Discuss the principle of Spore Staining technique in detail.
- (v) The Maggot experiment by Francisco Redi.
- (vi) Discuss the principle of pour plate and spread plate technique.

5 Write short notes on any three from the following :

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- (i) Phenol coefficient technique.
 - (ii) Discuss about the metals used for the preservation of Microorganisms.
 - (iii) Define culture media. Explain various types of media.
 - (iv) Write a note on Scanning Electron Microscope.
 - (v) Differences between Phase Contrast Microscopy and Fluorescence Microscopy.
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