



RI-16048

Seat No. \_\_\_\_\_

**Second Year B. Sc. Microbiology (Sem. III) Examination**

April/May – 2011

**Fundamentals of Microbiology : Paper - MB 301**

Time : 3 Hours]

[Total Marks : 75

- Instructions :**
- (1) All questions are compulsory.
  - (2) Figures on right side indicate marks.
  - (3) Draw labeled diagram wherever necessary.

- 1 (a) Answer the following : **05**
- (1) What are eukaryotic microorganisms ?
  - (2) Who prepared rabies vaccine for first time ?
  - (3) Which kingdom was proposed by Haeckel ?
  - (4) Name any three scientists who supported abiogenesis.
  - (5) Define : Exomicrobiology.

- 1 (b) Discuss the place of microorganisms in the living world. **10**

**OR**

- 1 Write short notes on : **15**
- (1) Germ theory of disease.
  - (2) Genetic differences in prokaryotes and eukaryotes.
  - (3) Whittaker's classification.

- 2 (a) Answer the following : **05**
- (1) Define : Numerical Aperture.
  - (2) What is the principle of phase contrast microscope ?
  - (3) Define : Immuno fluorescence.
  - (4) What is freeze etching method ?
  - (5) In which electron microscopic technique colloidal gold is used ?

2 (b) Write an essay on "Electron Microscopy". 10

OR

2 Write short notes on : 15

- (1) Phase contrast microscopy.
- (2) Dark field microscopy.
- (3) Compare & contrast light microscopy & electron microscopy.

3 (a) Answer the following : 05

- (1) Define : Pure culture.
- (2) What is a stain ?
- (3) What are auxochromes ?
- (4) What is an acidic dye ? Give examples.
- (5) What is enrichment ?

3 (b) Write an essay on the isolation of microbes. 10

OR

3 Write short notes on : 15

- (1) Natural Dyes
- (2) Gm staining
- (3) Biological methods of selection

4 (a) Answer the following : 05

- (1) What is the core group of penicillin ?
- (2) What is Microbicidal action ?
- (3) Define : broad spectrum antibiotics.
- (4) What is fractional sterilization ?
- (5) What are the limitations of B-Propiolactone.

(b) Write an essay on "Antibiotics inhibiting protein & nucleic acid synthesis." 10

OR

- 4 Write short notes on : 15
- (1) Sterilization by filtration.
  - (2) Phenol co efficient method.
  - (3) Types of penicillins.
- 5 (a) Answer the following : 05
- (1) Give names of any two spirochaete species.
  - (2) Enlist functions of capsules.
  - (3) Define : Protoplast.
  - (4) What is the role of centrally located mesosome in reproduction ?
  - (5) Name the chemical constituent that found in spore but not in vegetative cell.
- 5 (b) Write an essay on bacterial locomotor organelle. 10

**OR**

- 5 Write short notes on : 15
- (1) Gm negative cell wall.
  - (2) Sporulation.
  - (3) Shapes and arrangement of bacterial cells.
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