SET-1

KARNATAKA STATE OPEN UNIVERSITY

M.Sc., II Semester Examination- February 2015

MICROBIOLOGY

Course MB 2.1: Mycology and Phycology (Eukaryotes)

Time: 3 Hours **Max. Marks: 80**

Instruction: *Answer all the sections.*

Section A

Answer any **FOUR** questions from the following: **4 × 5 = 20**

1. Lysosomes.
2. Formation of dikaryons.
3. Fungal sex hormones.
4. Thallus organization in algae.
5. Structure of diatoms.
6. Algal pharming.

Section B

Answer any **THREE** questions from the following: **3 × 10 = 30**

7. Describe the structure of the plasma membrane.
8. Give an account of fungal nutrition.
9. Write briefly on different kinds of vegetative reproduction in fungi.
10. Write short notes on the following:
    a) General characteristics of ascomycotina.
    b) Morphological types of lichens.
11. Explain the mechanism of parasexuality in fungi.

Section C

Answer any **TWO** questions from the following **2 × 15 = 30**

12. Give an account on the general characteristics of eukaryotic microorganisms.
13. Write short notes on the following:
    a) Mycorrhizae.
    b) General characteristics of algae.
    c) Applications of Phaeophyceae.
14. Write short notes on the following:
    a) Economic importance of fungi.
    b) General characteristics of Chlorophyceae.
    c) *Penicillium.*
15. Explain in detail different mechanisms of spore liberation in fungi

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SET-1

KARNATAKA STATE OPEN UNIVERSITY

M.Sc. II Semester Examination- February 2015

MICROBIOLOGY

Course MB 2.2: Virology

Time: 3 Hours **Max. Marks: 80**

Instruction: *Answer all the sections.*

Section A

Answer any **FOUR** questions from the following: **4 × 5 = 20**

1. DNA viruses.
2. Bacteriophages.
3. Phage therapy applications.
4. Virusoids/satellites.
5. Enzyme-linked immunosorbent assay (ELISA).
6. Methods for detection of phage contamination.

Section B

Answer any **THREE** questions from the following: **3 × 10 = 30**

7. What are viruses? How they are different from other cellular organisms?
8. Write short notes on the following:
   a) Diseases caused by Prions.
   b) Cultivation of viruses.
9. Write short notes on the following:
   a) Lysogenic cycle of Bacteriophage.
   b) Treatment strategies for viral infections.
10. Describe the structure of T4 Bacteriophage.
11. Write short notes on the following:
    a) Viral plaque assay.
    b) Icosahedral viruses.

Section C

Answer any **TWO** questions from the following: **2 × 15 = 30**

12. Explain briefly the ICTV method of viral classification
13. Enlist serious viral diseases of live stock, causative virus and possible remedy.
14. Write short notes on the following:
    a) Structure of HIV
    b) Phage typing
    c) Immunoprecipitation
15. Write short notes on the following:
    a) Immunological methods of virus assays.
    b) Phage control methods in dairy industry.
    c) Progressive or escape hypothesis.

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SET-2

KARNATAKA STATE OPEN UNIVERSITY

M.Sc. II Semester Examination-February 2015

MICROBIOLOGY

Course MB 2.3: Microbial Metabolism and Physiology

Time: 3 Hours **Max. Marks: 80**

Instruction: *Answer all the sections.*

Section A

Answer any **FOUR** questions from the following **4 × 5 = 20**

1. Induced Fit Model.
2. Vitamin coenzymes.
3. Chlorophyll.
4. Characteristics of genetic code.
5. Factors that affect enzyme activity.
6. Lipid metabolism in bacteria.

Section B

Answer any **THREE** questions from the following **3 × 10 =30**

7. Write an essay on the Lac operon and its control elements.
8. Briefly explain the Entner-Doudoroff pathway.
9. Write short notes on the following:
   a) Effect of temperature on enzyme activity.
   b) Fermentative metabolism
10. Write short notes on the following:
    a) Specificity of enzymes.
    b) Enzyme nomenclature.
11. Write short notes on the following:
    a) Central dogma.
    b) Phycobiliproteins

Section C

Answer any **TWO** questions from the following: **2 × 15 = 30**

12. Describe the glyoxylate cycle pathway.
13. Give an account of photosynthesis in cyanobacteria.
14. Write short notes on the following:
    a) Properties of enzymes.
    b) Applications of microbial enzymes.
    c) tRNA.
15. Describe the process of Glycolysis.

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SET-2

KARNATAKA STATE OPEN UNIVERSITY

M.Sc. II Semester Examination-February 2015

MICROBIOLOGY

Course MB 2.4: Analytical Techniques in Microbiology

Time: 3 Hours **Max. Marks: 80**

Instruction: *Answer all the sections.*

Section A

Answer any **FOUR** questions from the following: $4 \times 5 = 20$

1. Obligate anaerobes.
2. Medline.
3. Polymerase Chain Reaction.
4. Bioautography.
5. FASTA.
6. Histogram.

Section B

Answer any **THREE** questions from the following: $3 \times 10 = 30$

7. Define bioinformatics and list its applications.
8. Describe the use of microscope for food analysis.
9. Give an account of DNA microarrays.
10. Write short notes on the following:
    a) NCBI.
    b) Standard error.
11. Write short notes on the following:
    a) Phylogenetic tree.
    a) Poisson distribution.

Section C

Answer any **TWO** questions from the following: $2 \times 15 = 30$

12. Explain in detail different chemical methods of water analysis.
13. Write short notes on the following:
    a) Microarray.
    b) Types of databases.
    c) Pie chart.
14. Write short notes on the following:
    a) Biosensors.
    b) Applications of mass spectroscopy.
    c) GenBank.
15. Explain the working model of HPLC.

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