

KARNATAKA STATE OPEN UNIVERSITY
M.Sc., MICROBIOLOGY- III Semester
Open Book Exam September/October 2020
Course MB 3.1: Microbial Genetics

Time: -----

Max. Marks: 80

Instruction: Answer all the sections.

Section A

Answer any **FOUR** questions from the following:

4 × 5 = 20

1. Restriction enzymes
2. Molecular cloning
3. Transduction
4. Cystic fibrosis
5. Nonsense mutations
6. Site-directed mutagenesis

Section B

Answer any **THREE** questions from the following

3 × 10 = 30

7. Explain the role of plasmids in transformation
8. Describe Lederberg and Tatum's experiment to demonstrate conjugation.
9. Describe tetrad analysis in *Neurospora crassa*.
10. Describe kappa particles in *Paramecium*.
11. Describe various types of chemical mutagens.

Section C

Answer any **TWO** questions from the following:

2 × 15 = 30

12. Give a brief account of principle and procedure of recombinant DNA technology.
13. Briefly describe asexual reproduction in fungi.
14. Explain the infection of bacteria by phages.
15. Briefly explain the classification of mutations.

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Course MB 3.2: Agricultural Microbiology

Time: -----

Max. Marks: 80

Instruction: Answer all the sections.

Section A

Answer any **FOUR** questions from the following:

4 × 5 = 20

1. Soil fungi
2. Ericoid mycorrhizas
3. Antibiotics derived from endophytes
4. Seaweed extracts
5. Disease triangle
6. Bacterial canker of tomato

Section B

Answer any **THREE** questions from the following:

3 × 10 = 30

7. Explain the root nodule formation mechanism by rhizobium.
8. Add a note on the potential of *Azotobacter* in Agriculture
9. What are the potential uses of cyanobacteria?
10. Give an account of various factors affecting composting process
11. What are the major bacterial diseases of rice?

Section C

Answer any **TWO** questions from the following:

2 × 15 = 30

12. Give an account of Vesicular arbuscular mycorrhiza.
13. Give a general account of commercial production of biofertilizers.
14. Give a general account of major diseases of vegetable crops.
15. Explain the concept of integrated pest management.

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KARNATAKA STATE OPEN UNIVERSITY
M.Sc., MICROBIOLOGY- III Semester
Open Book Exam September/October 2020
Course MB 3.3: Food and Dairy Microbiology

Time: -----

Max. Marks: 80

Instruction: Answer all the sections.

Section A

Answer any **FOUR** questions from the following:

4 × 5 = 20

1. Blue mold rot
2. Freeze drying
3. Salmonella
4. Gastroenteritis Viruses
5. Penicillic acid
6. Prebiotics

Section B

Answer any **THREE** questions from the following:

3 × 10 = 30

7. Write a short note on mycotoxins.
8. What are the different types of pasteurization?
9. Explain biosensor based methods of foodborne pathogen detection.
10. What are the sources of microorganisms in milk?
11. Write a note on microbial spoilage of cheese.

Section C

Answer any **TWO** questions from the following:

2 × 15 = 30

12. Briefly explain the microbial spoilage of fresh poultry.
13. Explain the principle and steps of Polymerase Chain Reaction.
14. Give an overview of physical methods of preservation.
15. Give a general account of various methods for foodborne pathogen detection.

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KARNATAKA STATE OPEN UNIVERSITY
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Course MB 3.4: Industrial Microbiology

Time: -----

Max. Marks: 80

Instruction: Answer all the sections.

Section A

Answer any **FOUR** questions from the following:

4 × 5 = 20

1. Microbial carbohydrases
2. applications of microbial cellulases
3. Conjugation
4. The fluidized bed fermenter
5. Vitamins and growth factors in industrial media
6. Arachidonic acid

Section B

Answer any **THREE** questions from the following

3 × 10 = 30

7. Write short notes on Proteobacteria of industrial importance.
8. Explain strain improvement by mutations.
9. Discuss various nitrogen sources used in industrial media.
10. What are the uses of lactic acid.
11. Give a general account of immobilization of enzymes and cells.

Section C

Answer any **TWO** questions from the following:

2 × 15 = 30

12. Give an account of various method of strain improvement by DNA manipulation.
13. Explain microbial production of kojic acid.
14. Give a general account of microbial enzymes and their applications.
15. Give an account of microbial biotransformation of a sterol.

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