Dr. V. S. KRISHNA GOVT. DEGREE COLLEGE (AUTONOMOUS)

MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) FIRST YEAR

SEMESTER – I (W.E.F. 2020-21)

COURSE 1 – INTRODUCTORY MICROBIOLOGY AND MICROBIAL DIVERSITY

Model Paper

Max Marks: 75   **Time: 3 hours**

SECTION – A

Answer All the questions (Draw diagram wherever necessary)   5 X 10 M = 50 M

1.a) Write an account on the contributions of Louis Pasteur and Robert Koch.

Or

1.b) discuss the outline classification of bacteria as per bergey's manual of systematic bacteriology.

2. a) Explain the general characteristics of cyanobacteria.

Or

2. b) write about the general characteristics of viruses.

3. a) Explain the general characteristics and outline classification of protozoa .

Or

3. b) Explain the principle and application of transmission electron microscope.

4. a) Discuss briefly the principle and procedure of acid fast and gram staining methods.

Or

4. b) Write about the chemical methods of sterilization.

5. a) Discuss the pour plate and micromanipulator methods along with their significance.

Or

5. b) Explain the methods of lyophilization and sand cultures.

Answer any FIVE questions (Draw the diagrams wherever necessary)   5 x 5 = 25 M

6. Edward Jenner

7. Heackles three kingdom classification

8. general characteristics of bacteria

9. Structure of TEM

10. SEM

11. Simple staining

12. Radiation methods

13. Dilution plating technique

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B.Sc. MICROBIOLOBY (CBCS) FIRST YEAR

SEMESTER – I (W.E.F. 2020-21)

COURSE 1 – INTRODUCTORY MICROBIOLOGY AND MICROBIAL DIVERSITY

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
Unit 1	2	2	30
Unit 2	2	2	30
Unit 3	2	2	30
Unit 4	2	1	25
Unit 5	2	1	25
Total No. of Questions	10	08	140

Note:

1. The question paper setter are requested to kindly adhere to the format given in the above table.

2. The question paper setter are also requested to set the questions in the following way:

    a. 70 % of questions – Remembering and Understanding type questions

    b. 30 % of questions – Applying, Evaluating, Analyzing and Creating type questions

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOGY (CBCS) FIRST YEAR; SEMESTER – II (W.E.F. 2020-21)

COURSE 2 – MICROBIAL BIOCHEMISTRY & METABOLISM

Model Paper

Max Marks: 75   **Time: 3 hours**

SECTION –A

Answer ALL questions (Draw the diagrams wherever necessary)   (5 x 10 = 50 M)

1. a) Explain the general characteristics of amino acids.

Or

1. b) Write about the saturated and unsaturated fatty acids.

2. a) Explain the principle and application of paper chromatography.

Or

2. b) Explain the principle and application of spectrophotometry.

3. a) Write about the properties and classification of enzymes.

Or

3. b) Explain the induced fit theory and lock and key model.

4. a) Discuss the uptake of nutrients by cells.

Or

4. b) Write about the factors influencing microbial growth.

5. a) Explain the glycolysis pathway.

Or

5. b) Write about the anaerobic photosynthesis in bacteria..

SECTION –B

Answer any FIVE questions (Draw the diagrams wherever necessary)   5 x 5 = 25 M

6. Disaccharides

7. Spingolipids

8. column chromatography

9. coenzymes

10. differential media

11. viable count

12. ED pathway

13. anaerobic respiration

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) FIRST YEAR; SEMESTER – II (W.E.F. 2020-21)

COURSE 2 – MICROBIAL BIOCHEMISTRY & METABOLISM

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) SECOND YEAR

SEMESTER – III (W.E.F. 2020-21)

COURSE 3 – MICROBIAL GENETICS AND MOLECULAR BIOLOGY

Model Paper

Max Marks: 75   **Time: 3 hours**

SECTION –A

Answer ALL questions (Draw the diagrams wherever necessary)   (5 x 10 = 50 M)

1.a) Explain the Structure and organization of prokaryotic DNA.

Or

1.b) Write about the Enzymes involved in respiration.

2. a) Discuss the Physical and chemical mutagens.

Or

2. b) Explain the outlines of DNA damage and repair.

3. a)Write about the One gene one enzyme and one gene one polypeptide hypothesis.

Or

3. b) Explain the types of RNA.

4. a) Write about different types of genes.

Or

4. b) Discuss the regulation of gene expression by lac operon

5. a) Explain the basic principles of genetic engineering.

Or

5. b) Discuss the outlines of gene cloning methods.

SECTION –B

Answer any FIVE questions (Draw the diagrams wherever necessary)   **5 x 5 = 25 M**

6. RNA as genetic meterial

7. plasmids

8. physical mutagens

9. transduction

10. Concept of gene

11. types of genes

12. ligases

13. PCR

Dr. V. S. KRISHNA GOVT. DEGREE COLLEGE (AUTONOMOUS)

MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) SECOND YEAR

SEMESTER – III (W.E.F. 2020-21)

COURSE 3 – MICROBIAL GENETICS AND MOLECULAR BIOLOGY

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
Unit 1	2	2	30
Unit 2	2	2	30
Unit 3	2	2	30
Unit 4	2	1	25
Unit 5	2	1	25
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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) SECOND YEAR; SEMESTER – IV (W.E.F. 2020-21)

COURSE 4 – IMMUNOLOGY & MEDICAL MICROBIOLOGY

Model Paper

Max Marks: 75   **Time: 3 hours**

SECTION –A

Answer ALL questions (Draw the diagrams wherever necessary)   (5 x 10 = 50 M)

1. a) Write a brief account of primary lymphoid organs of immune system.

Or

1. b) Discuss about various cells of immune system with their functions.

2. a) Explain the procedure for production of monoclonal antibodies and their applications.

Or

2. b) Discuss different types of Antigen – Antibody reactions.

3. a) Discuss about biochemical methods of identification of microbial pathogens.

Or

3. b) Explain the different molecular techniques used in identification of microbial pathogens.

4. a) Write about causative agent, symptoms, diagnosis and control of tuberculosis.

Or

4. b) Write about causative agent, symptoms, diagnosis and treatment of HIV.

5. a) Discuss about different tests for determining antibiotic susceptibility.

Or

5. b) Write about properties and mode of action of different classes of antibacterial agents.

SECTION –B

Answer any FIVE questions (Draw the diagrams wherever necessary)   **5 x 5 = 25 M**

6. Humoral immunity

7. T-Lymphocytes

8. Antibody – types, properties and functions

9. Types of hypersensitivity

10. Virulence mechanisms

11. Pathogen, pathogenicity and invasion mechanisms

12. Malarial symptoms and control methods

13. Recombinant vaccines

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) SEOND YEAR

SEMESTER – IV (W.E.F. 2020-21)

COURSE 4 – IMMUNOLOGY & MEDICAL MICROBIOLOGY

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
Unit 1	2	2	30
Unit 2	2	2	30
Unit 3	2	2	30
Unit 4	2	1	25
Unit 5	2	1	25
Total No. of Questions	10	08	140

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOGY (CBCS) SECOD YEAR; SEMESTER – IV (W.E.F. 2020-21)

COURSE- 5 ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY

Model Paper

Max Marks: 75   **Time: 3 hours**

SECTION –A

Answer ALL questions (Draw the diagrams wherever necessary) (5 x 10 = 50 M)

1. a) Explain the microflora of fresh water and marine habitats.

(Or)

1. b) Write about the extremophiles.

2. a) Write about the treatment of drinking water

(Or)

2. b) Explain the microbial interactions with examples.

3. a) Describe the methods of solid waste disposal methods.

(Or)

3. b) Write about the sewage treatment method in detail.

4. a) Discuss the plant growth promoting microorganisms.

(Or)

4. b) Write about the biological nitrogen fixation.

5. a) Explain the symptoms of plant diseases caused by fungi

(Or)

5. b) Discuss the principles of plant disease control.

SECTION –B

Answer any FIVE questions (Draw the diagrams wherever necessary)   5 x 5 = 25 M

6. soil profile

7. Aero microflora

8. carbon cycle

9.membrane filter technique

10. oxidation ponds

11. composting

12. *Rhizobium*

13. Tomato leaf curl

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOGY (CBCS) SECOD YEAR; SEMESTER – IV (W.E.F. 2020-21)

COURSE - 5 ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
Unit 1	2	2	30
Unit 2	2	1	25
Unit 3	2	1	25
Unit 4	2	2	30
Unit 5	2	2	30
Total No. of Questions	10	08	140

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MADDILAPALEM, VISAKHAPATNAM

B.Sc. MICROBIOLOBY (CBCS) (W.E.F 2020 - 21)

IIIYEAR – SEMESTER – V/ VI

COURSE-6A FOOD AND INDUSTRIAL MICROBIOLOGY

Model Paper

Max Marks: 75M   **Time: 3 hours**

PART – A

Answer all the questions (Draw the diagrams wherever necessary) [5 X 10 = 50M]

1 a) Write about the Microbial spoilage of Fruits, Meat and Milk.

(OR)

1 b) Write a note on Salmonellosis & its detection.

2 a) Write about the Fermented Dairy foods.

(OR)

2 b) Write about the Probiotics & their benefits.

3 a) Write about the Industrial applications of *Aspergillus niger*& yeasts.

(OR)

3 b) Explain the isolation and screening techniques for isolating industrial microorganisms.

4 a) Discuss the various types of fermentations (solid and liquid state).

(OR)

4 b) Explain the steps in downstream processing of industrial products.

5 a) Write about the industrial applications of microorganism in detergents and textile industry.

(OR)

5 b) Write about the Industrial production of Ethyl alcohol and vitamin B-12.

PART – B

Answer any **Five** questions from the following   [5 X 5 = 25 M]

6. Botulism

7. Chemical methods of food preservation.

8. Single cell proteins (SCP)

9. Actinomycetes

10. Secondary metabolites

11. Fermentation media

12. Citric acid production

13. Amylase production

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B.Sc. MICROBIOLOBY (CBCS) (W.E.F 2020 – 21)

III YEAR – SEMESTER – V/ VI

COURSE – 6A: FOOD AND INDUSTRIAL MICROBIOLOGY

BLUE PRINT FOR QUESTION PAPER SETTER

Units	8 M Questions	4 M Questions	Marks allotted to the Unit
Unit 1	2	1	25
Unit 2	2	2	30
Unit 3	2	2	30
Unit 4	2	1	25
Unit 5	2	2	30
Total No. of Questions	10	08	140

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MADDILAPALEM, VISAKHAPATNAM

B. Sc. MICROBIOLOBY (CBCS) FINAL YEAR, SEMESTER – V/VI (W.E.F. 2020-21)

COURSE-7A: CLINICAL MICROBIOLOGY

Model Paper

Max Marks: 75M   **Time: 3 hours**

PART – A

Answer **ALL** the questions. Each question carries 10 Marks: (5 x 10 = 50 Marks)

1 a). Write about the frequency of occurrence of a disease.

(OR)

1 b) Explain the various process of transmission of disease.

2 a) Discuss the pathogenesis, etiology & laboratory diagnosis of Cholera.

(OR)

2 b) Discuss the pathogenesis, etiology & laboratory diagnosis of Pneumonia.

3 a) Explain the IMViC test in detail.

(OR)

3 b) Write down the methods for qualitative determination of antibiotic sensitivity.

4 a) Explain the principle, procedure, and applications of ELSIA.

(OR)

4 b) Discuss the methods for observation of blood cells.

5 a) Discuss the blood grouping and WIDAL test allutination reactions. about methods of

determination of antibiotic sensitivity.

(OR)

5 b) Explain the principle, procedure and applications of ELSIA.

PART – B

Answer any **FIVE** questions. Each question carries 4 Marks: (5 x 5 = 25 Marks)

6. Herd immunity

7. Portals of exit

8. UTI

9. Bacteraemia

10. Sugar fermentation tests

11. BT & CT

12. Western blot

13. E-test

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MADDILAPALEM, VISAKHAPATNAM

B. Sc. MICROBIOLOBY (CBCS) FINAL YEAR, SEMESTER – V/VI (W.E.F. 2020-21)

<u>COURSE-7A: CLINICAL MICROBIOLOGY</u>

BLUE PRINT FOR QUESTION PAPER SETTER

Units	10 M Questions	5 M Questions	Marks allotted to the Unit
Unit 1	2	2	30
Unit 2	2	2	30
Unit 3	2	2	30
Unit 4	2	1	25
Unit 5	2	1	25
Total No. of Questions	10	8	140

Note:

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