22MB-6A

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular) Semester-V
( 2022-23 Admitted Batch)

Paper : Industrial Microbiology
Marks : 60

Time : 3 Hrs
Date : 30-11-2024

## SECTION-A

**Answer the following questions** 5X8=-40M

1. a) Explain the raw materials and their importance in the production media?

(Or)

b) Describe the spring development methods?

2. a) Explain the design of a stirred tank bioreactor?

(Or)

b) Explain the optimal conditions required to operate an industrial fermenter?

3. a) Write a description on beer production?

(Or)

b) Explain the method of downstream processing?

4. a) Discuss the industrial uses of bacteria?

(Or)

b) Describe the citric acid production?

5. a) Write about the uses of microbial enzymes in various fields?

(Or)

b) Explain immobilization techniques of enzymes?

## Section B

**II. Answer any FIVE from the following questions:** **5X4=20 M**

6. Serial dilution procedure
7. Biogas
8. Penicillin extraction from fermented media
9. Antibiotic assay
10. Differences between production and growth media
11. Secondary screening methods
12. Fed batch fermentation
13. Freeze drying
14. Baker's yeast
15. Therapeutic applications of immobilized enzymes

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22MB-7B

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc( Regular) Semester-V
( 2022-23 Admitted Batch)

Paper : Food Microbiology
Marks : 60

Time : 3 Hrs
Date : 02-12-2024

## SECTION - A

ANSWER ALL QUESTIONS. 5 X 8 = 40M

1 a) 1. A. Discuss the spoilage of meat and milk

(OR)

b. Discuss the causative agent, symptoms, pathogenesis, diagnosis of salmonellosis.

2. a. Elaborate different physical methods of food preservation

(OR)

b. Elaborate different methods of chemical preservation of food.

3. a. Write about the role of microorganisms in preparation of fermented foods.

(OR)

b. Write about the preparation, types and benefits of cheese.

4. A. Describe the methods employed in testing the milk quality.

(OR)

b. Describe various methods of pasteurization of milk.

5. A. Explain the application of microbial enzymes in diary industry.

(OR)

5. B. Explain the sanitary practices used in food quality control.

## SECTION – B

**ANSWER ANY FIVE QUESTIONS . 5 X 4 = 20M**

6. Spoilage of canned foods
7. Botulism
8. Food packing materials
9. Food classification based on shelf life
10. Yogurt preparation
11. Single cell proteins
12. Source of microorganisms in milk
13. Biochemical activities of microorganisms in milk
14. HACCP
15. Genetically modified foods Mechanical storage of energy.

20BC-25B

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular& Supplementary) Semester-IV
(w.e.f. 2020 Admitted Batch)

PAPER : Microbiology , Immunology and Molecular Biology TIME : 3 Hrs

Marks : 75 Date : 07-09-2022

### SECTION – A

5 x 10 M = 50 M

**I. Write essay questions**

1. A) Discuss about the bacterial structure in detail.

(Or)

B) Discuss about the kinetics of bacterial growth curve.

2. A) Describe the mechanism of biological nitrogen fixation.

(Or)

B) Describe the Nitrogen cycle.

3. A) Elaborate on batch and continuous culture techniques in fermentation.

(Or)

B) Elaborate on the industrial production of alcohols.

4. A) Explain the concept and components of innate and acquired immunity.

(Or)

B) Explain briefly about different antigen – antibody reactions.

5. A) Write in detail about DNA replication.

(Or)

B) Write in detail about Polymerase Chain Reaction (PCR) and its applications.

### SECTION – B

5 x 5 M = 25 M

**II. Write short answer questions**

6. Corona virus
7. Plant viruses
8. Nitrogenase system
9. Utilization of Nitrate ion
10. Types of fermenters
11. Bioremediation enzymes
12. Monoclonal antibodies
13. Traditional vaccines
14. Genetic code
15. Restriction enzymes

20MB-24B

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular) Semester-IV
(w.e.f. 2020 Admitted Batch)

PAPER : Immunology and Medical Microbiology — TIME : 3 Hrs
Marks : 75 — Date : 08-09-2022

### SECTION – A

**I. Write essay questions** — 5 x 10 M = 50 M

1. A) Write in detail about cells of immune system and their functions.

(Or)

1. B) Describe about processes involved in active and passive acquired immunity.

2. A) Describe about types of antigen – antibody reactions.

(Or)

2. B) Discuss the principle, procedure and applications of ELISA technique.

3. A) Elaborate procedure for production and applications of monoclonal antibodies.

(Or)

3. B) Define hypersensitivity and discuss about types of hypersensitivity reactions.

4. A) Write an account of collection, transport, and processing of clinical samples.

(Or)

4. B) Describe about properties and applications of recombinant vaccines.

5. A) Describe about causative agent, symptoms, diagnosis and treatment of Malaria.

(Or)

5. B) Describe about causative agent, symptoms, diagnosis and treatment of AIDS.

### SECTION – B

**II. Write short answer questions** — 5 x 5 M = 25 M

1. Components of innate immunity
2. Give an account of T – lymphocytes
3. Antigen and its types
4. Structure of Immunoglobulin G
5. Autoimmunity
6. Phagocytosis
7. Interferons
8. Attenuated vaccines
9. Write a brief account of causative agent, symptoms of Dengue
10. Write a brief account of causative agent, symptoms of Amoebiasis

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23MB-MN2-2A

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular) Semester-III
( 2023-24 Admitted Batch)

Paper : Biomolecules and Enzymology
Marks : 60
Time : 3 Hrs
Date : 12-12-2024

## SECTION A

**Answer all questions** 5X8-40 Marks

**Draw neat labeled diagrams wherever necessary**

1. a) Discuss the outline classification of carbohydrates with examples?

OR

b) Explain general properties and biological significance of polysaccharides with example?

2. a) Define lipids and explain structure and properties of lipids?

OR

b) Define fatty acids and explain saturated and unsaturated fatty acids?

3. a) Discuss the general characteristics of amino acids and proteins?

OR

b) Write about the primary, secondary, tertiary and quaternary structure of proteins?

4. a) Illustrate the structure, types and functions of RNA?

OR

b) Discuss in detail about water soluble vitamins and significance in metabolism?

5. a) Classify enzymes and explain mechanism of action of enzyme by proposed models of hypothesis?

OR

b) Explain different types of enzyme inhibitions?

## SECTION B

**Answer any FIVE of the following** **5x4-20 Marks**

6. Epimers & Anomers
7. Non reducing sugar
8. Steroids
9. Wax
10. Gramicidine
11. Structure of standard protein aminoacid
12. Fat soluble vitamins
13. DNA double helix
14. Coenzyme
15. Effect of pH on enzyme activity

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# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular )Semester-III
(w.e.f.2022 Admitted Batch)

PAPER : Microbial Genetics and Recombinant DNA Technology TIME : 3 Hrs
Marks : 60 Date : 04-01-2024

### Section- A

**Answer ANY FIVE questions Each question carries 8 marks (8 X 5 =40 Marks)**

1. **a) Discuss the classic experiments to prove that DNA as a genetic material?**

   **(OR)**

   **b) Describe the genetic recombination/ gene transfer mechanism in bacteria?**

2. **a) Explain briefly about the Watson Crick model of DNA?**

   **(OR)**

   **b)Write briefly about the enzymes involved in the semi-conservative mode of replication?**

3. **a) Define operon? Explain the regulation of gene expression in bacteria – Lac operon?**

   **(OR)**

   **b) What are mutagens? Discuss various physical and chemical mutagens?**

4. **a) Describe the outlines of RNA biosynthesis in prokaryotes?**

   **(OR)**

   **b) Explain the salient features of genetic code?**

5. **a) Describe briefly about the construction of genomic and cDNA libraries?**

   **(OR)**

   **b) What is genetic engineering? Write about the enzymes used in genetic engineering?**

### Section – B

**Answer ANY FIVE questions Each question carries 4 marks (4 X 5M = 20 Marks)**

6. **Plasmids**
7. **Types of transposons**
8. **One gene and one enzyme**
9. **Concept of gene**
10. **Frame shift mutations**
11. **Nucleotide Excision repair**
12. **Types of RNA and their functions**
13. **Draw and label the structure of tRNA**
14. **Restriction endonucleases**
15. **Vectors**

20MB-6A

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc (Regular) Semester-V
(w.e.f.2021-22 Admitted Batch)

Paper : Industrial Microbiology
Marks : 75

Time : 3 Hrs
Date : 31-01-2024

**SECTION-A (5×10=50 M)**

**Answer ALL the questions. Each question carries 10 marks**

1. a) Write a procedure to improve the industrially important strains?

   **(Or)**

   b) Explain the primary screening method to isolate industrially important microorganisms?

2. a) Write a description on types of fermenters along with a structural diagram?

   **(Or)**

   b) Explain different types of fermenters?

3. a) Discuss the production of biogas?

   **(Or)**

   b) Discuss the production of vitamin B12?

4. a) Explain industrial production of penicillin F?

   **(Or)**

   b) Discuss the production of baker's yeast?

5. a) Write an immobilization procedure for enzymes?

   **(Or)**

   b) Discuss the industrial applications of immobilized enzymes?

**Section B (5X5 = 25)**

**Answer any FIVE from the following questions**

6. Importance of antifoaming agents in fermentation?
7. Submerged Fermentation?
8. Differentiate aerobic and anaerobic fermentations ?
9. Lyophilization
10. Extraction of ethyl alcohol from fermented media
11. Serial dilution
12. Citric acid is produced at lower PH, explain
13. Procedure for antibiotic assay
14. Therapeutic uses of enzymes
15. Lactic acid production

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20MB-7B

# GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS),SRIKAKULAM
## REACCREDITED WITH NAAC 'A' GRADE

B.Sc( Regular) Semester-V
(w.e.f.2021-22 Admitted Batch)

Paper : Food Microbiology
Marks : 75

Time : 3 Hrs
Date : 01-02-2024

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## SECTION – A

Answer ALL the questions (5x10=50M)

1. A. Discuss the spoilage of fruits and vegetables

(OR)

1. B. Discuss the causative agent, symptoms, pathogenesis, diagnosis of botulism.

2. A. Elaborate different physical methods of food preservation

(OR)

2. B. Elaborate different methods of chemical preservation of food.

3. A. Write about the role of microorganisms in preparation of fermented meat products.

(OR)

3. B. Write about the preparation, fermentation and benefits of yogurt.

4. A. Describe the methods employed in testing the milk quality.

(OR)

4. B. Describe various methods of pasteurization of milk.

5. A. Explain the importance of genetically modified foods and nutraceuticals.

(OR)

5. B. Explain the methods for rapid detection of foodborne pathogens from food.

## SECTION – B

Answer any FIVE questions (5x5=25M)

6. Spoilage of milk
7. Salmonellosis
8. Food packing materials
9. Food preservation by radiation
10. Edible mushrooms
11. Single cell proteins
12. Source of microorganisms in milk
13. Biochemical activities of microorganisms in milk
14. HACCP
15. Genetically modified foods

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