S–0362

Sub. Code
23BMC1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Microbiology and Clinical Lab Technology

CELL BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Robert Hooke.
2. Protoplasm.
3. Define phagocytosis.
4. Microtubules.
5. Golgi apparatus.
6. Spherosomes.
7. Define Meiosis.
8. Stem Cells.
9. MAP.
10. AMP.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Write note on history of cell biology.

Or

(b) Differentiate Gram positive and Gram negative bacteria.

12. (a) Illustrate the structure and functions of plant cell wall with a neat diagram.

Or

(b) Explain the fluid-mosaic model of the plasma membrane.

13. (a) Illustrate the structure and functions of ribosome on the cell.

Or

(b) Explain the importance and functions of peroxisomes.

14. (a) Comment on embryonic stem cells.

Or

(b) Explain the causes of cell death.

15. (a) Write short note on types of cell signaling.

Or

(b) Analyse the role of cyclic GMP.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe about classification of cell types.

17. Explain the structure and functions of plasma membrane with a neat diagram.

18. Illustrate the structure and functions of endoplasmic reticulum.

19. Explain the Mitosis cell division with diagram.

20. Summarize MAP Kinase pathway.

———————

S-0363

Sub. Code
23BMC1S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

First Semester

Microbiology And Clinical Lab Technology

SKILLS IN MICROBIOLOGY AND CLINICAL LABORATORY

(CBCS 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **ALL** questions.

1. What do you mean by asepsis?

2. How to do stock culture?

3. Define pathogen.

4. What are carriers?

5. Why 'O' blood group called universal donor?

6. List out some examples of anticoagulants.

7. Who first used the word " Vaccine"?

8. Name any four antimicrobial drugs?

9. Describe impacts of x-ray.

10. Which organ can ultra sound detect?

Part B (5 × 5 = 25)

Answer all questions choosing either (a) or (b).

11. (a) Write in detail about hot air oven and mention the importance in clinical labs.

Or

(b) Mention some of the methods used for decontaminations

12. (a) Comment on Nosocomial infection

Or

(b) Differentiate between virulence and pathogenicity.

13. (a) Illustrate the functions of blood?

Or

(b) Briefly explain Haemoglobinometer.

14. (a) Define antibiotics. Describe its primary mechanism of action.

Or

(b) List the major categories of microorganisms targetted by antimicrobial drugs.

15. (a) Describe radiographic film

Or

(b) What is the principle of MRI and Mention the safety aspects?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. List out different physical methods of sterilization describe any one of them.

17. Describe the major routes of pathogens entry into a host with examples.

18. Write the chart of blood grouping with example.

19. Discuss the importance of vaccination schedule.

20. Explain the principle, advantages and disadvantages of CT Scan.

———————

S–0364

Sub. Code
23BMC1FC

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025.

First Semester

Microbiology and Clinical lab Technology

INTRODUCTION TO CLINICAL LAB DIAGNOSIS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the role of a medical laboratory technologist.

2. Mention two ways to prevent chemical spills in the lab.

3. What is the purpose of anticoagulants in blood collection?

4. Which type of containers are used for urine sample collection?

5. Name two types of pipettes used in laboratories.

6. Spell out the significance of cuvettes in a colorimeter.

7. Find the primary use of a water bath in a laboratory.

8. Show two differences between an oven and an incubator.

9. Explain about normal solution.

10. Add an account on stock standard solution.

Part B

$(5 \times 5 = 25)$

Answer **all** questions. Choosing either (a) or (b).

11. (a) Describe three common laboratory accidents and how to prevent them.

Or

(b) Explain the first aid steps for a chemical splash in the eyes.

12. (a) List and explain three types of specimens collected for laboratory testing.

Or

(b) Discuss the role of single oxalate and double oxalate in laboratory testing, including their advantages and limitations.

13. (a) Illustrate about the process of calibrating a glass pipette.

Or

(b) Narrate the role of a desiccator and its importance in laboratory experiments.

14. (a) Distinguish between water distillation and water deionization.

Or

(b) Determine the basic principles and parts of a colorimeter with a labelled diagram.

15. (a) Predict the importance and applications of buffer solutions in laboratories.

Or

(b) Conclude the concept of diluting a solution with an example.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Formulate the importance of professional ethics in laboratory practice, including issues related to confidentiality, integrity, and accuracy.

17. Critically comment on the safety precautions and best practices involved in specimen collection and transportation to prevent contamination and degradation.

18. List out various types of laboratory flasks, their structure, and their specific uses in scientific experiments.

19. Evaluate the guidelines and precautions to be taken while handling a pH meter to ensure accurate measurements.

20. Analyze about the preparation of molar and percent solutions with examples.

———————

S–0367

Sub. Code
23BMCA3

U.G. DEGREE EXAMINATION, NOVEMBER 2025

Microbiology and Clinical Lab Technology

Allied – HOSPITAL INFECTION CONTROL PRACTICES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define nosocomial infection.

2. List two common routes of transmission for hospital acquired infections.

3. Why is proper segregation of biomedical waste important?

4. What colour-coded bin is used for disposal of sharps in biomedical waste management?

5. What is the difference between sterilization and disinfection?

6. What is the significance of using a chemical indicator during sterilizations?

7. Name two bacteria associated with hospital-acquired infections.

8. Define standard precautions in infection control.

9. Give two examples of multi-drug resistant organisms.

10. Why is patient education important in preventing hospital-acquired infections?

Part B $(5 \times 5 = 25)$

Answer **all** the questions choosing either (a) or (b).

11. (a) Explain the chain of infection and discuss how breaking this chain can help in controlling hospital-acquired infections.

Or

(b) Discuss the role of hospital staff training and education in infection control.

12. (a) How does antibiotic stewardship contribute to infection control in hospitals?

Or

(b) Discuss the different types of isolation precautions and analyse their role in controlling hospital-acquired infections.

13. (a) Explain the process of conducting an infection control audit in a hospital.

Or

(b) Discuss the role of hospital administration in hospital infection control.

14. (a) Explain universal precautions and its components.

Or

(b) Discuss the role of chemical disinfectants in hospital infection control.

15. (a) Write a note on indicators used in sterilization.

Or

(b) Describe the different colour-coded bins used in biomedical waste management and their specific uses.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss the importance of hand hygiene practices in healthcare settings and how it contributes to reducing the spread of infections within hospitals.

17. Analyze the factors contributing to the emergence of multi-drug resistant organisms in hospitals and evaluate the effectiveness of various infection control measures in combating them.

18. Describe the structure and functions of infection control committees in hospitals.

19. Explain in detail about the role and responsibilities of infection control nurse.

20. Classify the biomedical wastes and discuss the problems and hazards related to biomedical waste management.

———————

S–0369

Sub. Code
23BMC2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Microbiology and Clinical Lab Technology

GENERAL MICROBIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define spontaneous generation theory.

2. What are the two main differences between fungi and bacteria?

3. What are the two main functions of endospores?

4. What is the composition of the capsule and slime layer?

5. What are the types of staining techniques in microbiology?

6. What is the difference between lag phase and log phase of bacterial growth?

7. What is antimicrobial resistance?

8. What is the magnification power of a microscope?

9. What is the purpose of the condenser in the microscope?

10. What is the primary factor limiting bacterial growth in the stationary phase?

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Explain about the bacterial classification according to Bergey's manual of systemic Bacteriology.

Or

(b) What is the Five kingdoms concept of Whittaker?

12. (a) Describe the cell wall appendages of bacteria.

Or

(b) Briefly explain about bacteria spores with suitable examples

13. (a) Write about Ziehl — Neelson staining technique.

Or

(b) Explain about endospore staining methods.

14. (a) Describe the function of glycogen as a reserve food material in bacteria.

Or

(b) Discuss the role of reserve food materials in bacterial survival and adaptation.

15. (a) Write about the fluorescence microscope principle, construction, and uses.

Or

(b) Explain the difference between scanning and transmission electron microscopy.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the key discoveries and contributions made during the "Golden Age of Microbiology"

17. Describe the principle, procedures, and significance of any five microbial staining techniques.

18. Describe the different classes of antibiotics based on their mechanism of action.

19. Discuss the various modes of bacterial reproduction.

20. Explain the working principle of an electron microscope and distinguish between the different types of electron microscopes.

———————

S–0370

Sub. Code
23BMC2S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Microbiology and Clinical Lab Technology

HUMAN ANATOMY AND HAEMATOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Metaphase
2. Osteon
3. Endosteum
4. Dura matter
5. Beta cells of pancreases
6. Goiter
7. Phylum terminal
8. Hageman factor
9. Megaloblastic anemia
10. Neuro Muscular junction

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Explain the Structure and function of Mitochondria.

Or

(b) Explain the squamous epithelium and its types.

12. (a) Explain the Structure of Long bone.

Or

(b) Tabulate the difference between the various types of muscles.

13. (a) Cerebrospinal fluid and its circulation.

Or

(b) Draw and label the cross section of spinal cord.

14. (a) Explain the pericardium.

Or

(b) Explain about programmed cell death.

15. (a) List out the various clotting factors.

Or

(b) Explain about leukemia.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain various types of epitheliums in detail with suitable examples.

17. Explain the internal structure of heart in detail with suitable illustrations.

18. Explain the hematopoiesis in detail with suitable illustrations.

19. Give a detail notes on hemopoietic stem cell and its lineage.

20. Describe the cerebellum in detail with suitable illustrations.

———————

S–0371

Sub. Code
23BMC2S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Second Semester

Microbiology and Clinical Lab Technology

MICROBIAL PHYSIOLOGY AND METABOLISM

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Generation time

2. Methylotrophs

3. Siderophore

4. Diffusion

5. Passive transport

6. Phycobilins

7. Substrate level phosphorylation

8. Electron transport chain

9. Nitrate reduction

10. Nitrogen fixation

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write the difference between batch and continuous culture.

Or

(b) Comment on the features of autotrophs.

12. (a) Describe group translocation process.

Or

(b) Discuss secondary active transport mechanism.

13. (a) Elucidate the structure, properties and functions of chlorosome.

Or

(b) Write the difference between cyclic and non-cyclic electron transport.

14. (a) Describe Entner Duodroff pathway.

Or

(b) Describe chemiosmotic mechanism of ATP generation.

15. (a) Write a brief note on nitrogen fixation by Rhizobium.

Or

(b) Write a brief note on nitrogenase enzyme.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss on the survival of microbes at extreme environments.

17. Explain the process of iron uptake by microbes.

18. Discuss about the structure, properties and functions of various photosynthetic pigments.

19. Describe gluconeogenesis and write its significance.

20. Discuss the process of nitrate reduction.

S–0372

Sub. Code
23BMC3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

MICROBIOLOGY AND CLINICAL LAB TECHNOLOGY

CLINICAL BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Blood
2. CSF
3. Dissaccharides
4. GTT
5. Lipids
6. Symptoms of xanthomatosis
7. Fibrous proteins
8. Creatinine
9. SGOT
10. Bile Salts

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain about collection and preservation of plasma.

Or

(b) Illustrate about clinically important enzymes.

12. (a) Discuss about Applications of Polysaccharides.

Or

(b) Describe about Importance of Glucose tolerance test.

13. (a) Comment on properties of Lipids and add a note on classification of lipids.

Or

(b) Explain in detail about aetiology and clincal features of Atherosclerosis.

14. (a) Summarize structure and properties of Amino acids.

Or

(b) Narrate clinical features of phenylketonuria.

15. (a) Give a short note on liver function test-SGPT.

Or

(b) Write about deficiency disorders of vitamins.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay about Buffers and electrolytes.

17. Give a brief explanation about disorders of Carbohydrate metabolism.

18. Discuss about disorders of Lipid Metabolism.

19. Briefly explain the classification and structure of proteins.

20. Describe the diseases of new born of their complications.

———————

S–0373	Sub. Code 23BMC3S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Third Semester

Microbiology and Clinical Lab Technology

MEDICAL MICROBIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is the role of lysozyme in antibacterial defense?

2. Define phagocytosis.

3. List the serological methods adopted for microbial diagnosis.

4. Recall drug resistance.

5. Show the action mechanism of macrolides

6. How does acyclovir work against viruses?

7. Find how anthrax transmitted to humans?

8. Name one antibiotic used to treat syphilis.

9. Predict the pathogenesis of serum hepatitis.

10. Infer the symptoms of dengue fever.

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Determine the importance of normal microflora in human health?

Or

(b) How do opportunistic infections occur, and why are they significant?

12. (a) Explain the proper methods of transporting clinical samples to the laboratory.

Or

(b) Describe the different types of active and passive immunization.

13. (a) Discuss the mode of action of cephalosporins and their clinical significance.

Or

(b) Critically comment on the mechanism of griseofulvin against fungal infections.

14. (a) Interpret your views on the transmission of typhoid fever.

Or

(b) Define the role of hospitals in the spread of nosocomial infections.

15. (a) Summarize how Entamoeba histolytica cause amoebiasis.

Or

(b) Give outline view of prevention and control strategies for AIDS.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain about the host-pathogen interactions including infection, invasion and virulence.

17. Describe the mode of action, clinical use, and significance of penicillin and sulfonamides in antimicrobial therapy.

18. State the challenges in antiviral drug development and how amantadine and azidothymidine address these challenges.

19. Discuss in detail the causative agent, pathogenesis, treatment and prevention of tuberculosis.

20. Conclude the causative agent, symptoms, treatment, and prevention of influenza.

———————

S–0377

Sub. Code
23BMC5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Microbiology and Clinical Lab Technology

SYSTEMATIC BACTERIOLOGY AND VIROLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is the causative agent of diphtheria and what is its main virulence factor?

2. Mention the selective medium used for isolation of Neisseria gonorrhoeae?

3. Name the virulence factors of *Klebsiella pneumoniae*.

4. Which stain is used for acid-fast bacteria?

5. Find the causative agent of Lyme disease.

6. Spell the diagnostic test used for leptospirosis.

7. Sketch out the shape of rabies virus.

8. Identify suitable vectors responsible for transmission of yellow fever.

9. Define the advantages of chick embryo fibroblast culture.

10. Give examples of viral inclusion bodies.

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Discuss the pathogenesis and laboratory diagnosis of Streptococcus pyogenes.

Or

(b) Write short notes on the clinical significance of Pseudomonas aeruginosa.

12. (a) Explain in brief account on pathogenicity of *Clostridium tetani*.

Or

(b) Outline the epidemiology and laboratory diagnosis of *Salmonella typhi*.

13. (a) Examine in detail about epidemiology, pathogenicity and laboratory diagnosis of *Rickettsia prowazekii*.

Or

(b) Elaborate about prevention and control of epidemic typhus.

14. (a) Give a detail account on types of viral capsid symmetry with suitable examples.

Or

(b) Describe about the pathogenesis and prevention of poliomyelitis.

15. (a) Categorize different tissue culture techniques used for virus cultivation with examples.

Or

(b) Determine the significance of plaque essay for enumeration of viruses with advantages and limitations.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the pathogenic mechanisms of *E. coli* and write about its laboratory diagnosis.

17. Compare and contrast *M. leprae* and *M. tuberculosis* under characteristics, epidemiology, pathogenesis and lab diagnosis.

18. Discuss the role of *Chlamydia trachomatis* in ocular and genital infections with their public health significance.

19. Illustrate the causative agent, symptoms, pathogenesis, treatment, and prevention of AIDS.

20. Narrate haemagglutination essay in detail and its applications in virology.

———————

S–0378

Sub. Code
23BMC5C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

MICROBIOLOGY AND CLINICAL LAB TECHNOLOGY

CLINICAL IMMUNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Immunology?

2. Write about Null cells?

3. What is antigenicity?

4. Write the properties of MHC?

5. Explain the functions of IgA?

6. Define recombinant Vaccines?

7. How to Identify Hypersensitivity reactions?

8. What is the primary reason for organ transplantation?

9. Write about Applications of oucter double Immunodiffusion?

10. How does Immuno diffusion compare to ELISA?

Part B (5 × 5 = 25)

Answer **all** the questions choosing either (a) or (b).

11. (a) Discuss the properties of T lymphocytes?

Or

(b) Draw and Explain primary lymphoid organs?

12. (a) Discuss about the components of Innate Immune System.

Or

(b) Differentiate between Humoral and cell mediated Immunity?

13. (a) Elaborate the immunological significance of precipitation technique?

Or

(b) How does vaccines works in Immune system?

14. (a) Write about Mechanism involved in type I Hypersensitivity?

Or

(b) Illustrate about immunological response of Graft rejection?

15. (a) Describe about Principle and applications of Radial Immuno diffusion?

Or

(b) Explain the steps involved in Immuno electrophoresis.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay about History of Immunology.

17. Compare the two classes of Major Histocompatibility complex with reference to structure, function and Mechanism of action?

18. Differentiate between Monoclonal and polyclonal antibodies?

19. Define Hypersensitivity, classify them according to Gell and Coom's classification system.

20. What are the special features of antigen and antibody interaction? Discuss with the Illustration of RIA technique?

———————

S–0379	Sub. Code
	23BMC5C3

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Microbiology and Clinical Lab Technology

RECOMBINANT DNA TECHNOLOGY AND MOLECULAR DIAGNOSTICS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define recombinant DNA technology.
2. What is meant by ligation?
3. Infer your views on shuttle vector.
4. Recall the applications of phagemids.
5. Outline the significance of microinjection.
6. Expand GEMOs.
7. Explain about colony hybridization.
8. Critically comment on chromosome walking.
9. Write the principle of RFLP.
10. Predict the importance of DNA fingerprinting.

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Briefly explain the history and development of rDNA technology.

Or

(b) What are coupling tools in rDNA technology? Give examples.

12. (a) Describe in detail the different strategies used in gene cloning.

Or

(b) Explain the structure, properties, and applications of pUC vector.

13. (a) Define ultrasonication? How is it useful in direct gene transfer?

Or

(b) Examine the concept of insertional inactivation in selection of recombinant bacteria.

14. (a) Compare and contrast genomic DNA library and cDNA library.

Or

(b) Summarize the advantages and disadvantages of automated sequencing.

15. (a) Evaluate the basic principle and steps of RAPD technique.

Or

(b) Elaborate how DNA foot printing helps in studying protein—DNA interactions.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the major enzymes used in recombinant DNA technology with their functions.

17. Describe in detail the applications and limitations of various cloning vectors.

18. Compare direct gene transfer methods with Agrobacterium-mediated methods in gene transfer.

19. Prioritize the role of PCR and sequencing methods in modern biotechnology and diagnostics.

20. Formulate the working principle, procedure and applications of FISH technique.

———————

S–0380	Sub. Code 23BMC5E1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Microbiology and Clinical Lab Technology

Elective: BASICS OF BIOINFORMATICS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Spline variant
2. Explain about codons with suitable examples.
3. Expand and explain about BLAST.
4. List the functions of Rasmol Software.
5. Find the needs of homology in bio-informatics.
6. Recall your views on dot plot.
7. Give applications of Multiple sequence alignment.
8. State advantages of visualizing protein structures.
9. What is force field in molecular dynamics?
10. Write short notes on Structure based drug design.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Distinguish exons and introns with suitable examples.

Or

(b) Write an essay on the structure of amino acids and their classification in detail.

12. (a) Illustrate about PubMed and its significance in biological research.

Or

(b) Discuss the uses of ligand explorer in drug discovery.

13. (a) Add a short note on dynamic programming in sequence alignment.

Or

(b) Give an account on PAM scoring matrices and mention the significances in biology.

14. (a) Evaluate the importance of computational methods in phylogenetic tree construction.

Or

(b) Critically comment on protein data bank and mention its importance in bioinformatics.

15. (a) Determine the role of ab-initio method in protein structure prediction.

Or

(b) Explain the importance of drug target identification in bioinformatics.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the different levels of protein structures with suitable diagrams.

17. Define bioinformatics and computational biology. Discuss their scope and importance in life science.

18. Describe in detail about pairwise sequence alignment, highlighting global and local alignment with examples.

19. Discuss in detail account on progressive alignment algorithms with suitable examples.

20. Formulate in detail about the basic principle, steps and applications of molecular docking.

———————

S–0381

Sub. Code
23BMC5E2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

Fifth Semester

Microbiology and Clinical Lab Technology

Elective – FOOD AND DAIRY MICROBIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are intrinsic factors?

2. List the microbes present in vegetables.

3. What is the source of fruit spoilage?

4. Name the infection caused by Clostridium botulinum.

5. Mention any two food additives.

6. What are the uses of temperature in food preservation?

7. Define Cheese.

8. What is Bulgarian buttermilk?

9. Expand and Explain HACCP.

10. List the safety assurance in dairy industry.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Write the factors influencing the growth of microorganisms in food.

Or

(b) Give your views on simplified the microbes present in fish.

12. (a) Write short note on food intoxication and how it differ from food poisoning.

Or

(b) Define and describe about the significance of mycotoxins.

13. (a) Outline the chemical methods of food preservation.

Or

(b) Explain the preservation of foods by using radiation.

14. (a) Explain the microbial fermentation method of yogurt preparation.

Or

(b) Outline the production process and microbial action of Sauerkraut fermentation.

15. (a) Write the main aim of BIS and how BIS control the food agencies

Or

(b) Summarize the various phases of FDA approval in any food before marketing.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Summarize the role and significance of microorganisms in foods.

17. Criticize on food spoilage caused by salmonella.

18. Discuss the physical methods of food preservation.

19. Elaborate a brief note on fermentation process of any one alcoholic beverage.

20. Discuss on quality and safety assurance in food industry and mention about good manufacturing practices in detail.

———————