S–4505

Sub. Code
23BMC1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

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. Organismal theory.
2. Archeobacteria
3. Phagocytosis
4. Microfilaments
5. Microbodies
6. Chloroplasts
7. Cell cycle
8. Pleuripotent
9. Cell signaling
10. MAP

Part B (5 × 5 = 25)

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

11. (a) Classify cell types.

Or

(b) Give a short note on protoplasm theory.

12. (a) List down the functions of plant cell wall.

Or

(b) Differentiate endocytosis from exotosis.

13. (a) Explain phosphorylation.

Or

(b) Write a note on lysosomes.

14. (a) Explain eukaryotic cell cycle and its regulation.

Or

(b) Write a note on cell renewal.

15. (a) Explain signal amplification.

Or

(b) Comment on AMP pathway.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give a brief account on cell theories.

17. Explain the structure and functions of fungal cell wall.

18. Draw a neat diagram on the structure of mitochondria and state the functions.

19. Explain mitosis with neat diagrams.

20. Give the functions of cell surface receptors and add a note on quorum sensing.

S–4506	Sub. Code
	23BMC1S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024.

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. Aseptic technique
2. Disinfection
3. Pathogenicity
4. Carriers
5. Haematology
6. Serum
7. Antiseptics
8. Antifungals
9. Radio imaging
10. ECHO

Part B (5 × 5 = 25)

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

11. (a) Write a short note on dry heat method of sterilization.

Or

(b) Explain the principle and working system of autoclave.

12. (a) Analyze the opportunistic pathogens in human.

Or

(b) Explain in brief different modes of transmission of infections.

13. (a) Describe the procedures of clinical sample collection.

Or

(b) Explain glucose tolerance test.

14. (a) Analyse the types of antimicrobial drugs.

Or

(b) Define antibiotics and describe its types.

15. (a) Explain the working principle and applications of MRI.

Or

(b) Discuss the importance of autoanalysers used in clinical laboratory.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain in detail the methods employed for maintenance of microbial cultures in clinical Laboratory.

17. Elaborate the nosocomical infections and their causes in human.

18. Critically anise ABO blood grouping system.

19. Discuss in detail the various types of vaccines and their uses and add note on vaccine schedule.

20. Write in detail the working principle and applications of X-ray, CT, mammography and ECG.

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S–4507

Sub. Code
23BMC1FC

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

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** the questions.

1. MLTs
2. Code of ethics
3. Pus
4. EDTA
5. Desiccation
6. Pasteur pipette
7. Deionized water
8. Electrodes
9. Solutions
10. Buffer

Part B (5 × 5 = 25)

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

11. (a) Analyze the common lab accidents.

Or

(b) Write a short note on first aid.

12. (a) Describe sputum collection and transportation to clinical laboratories.

Or

(b) Explain the methods employed in collection urine and feces specimens for analysis.

13. (a) Write a short note on Petri dishes and depression plates used in clinical laboratories.

Or

(b) Describe the different types of flasks used in diagnostic centres.

14. (a) Explain the working principle and uses of calorimeter.

Or

(b) Write short note on Hot air oven and its use.

15. (a) Discuss on percent solution and its preparation.

Or

(b) Describe the preparation of standard stock solutions.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Critically evaluate the role of medical laboratory technologists.

17. Write a detailed account on various anticoagulants and their uses.

18. Give a detailed account on types of cuvette and their uses.

19. With neat sketch explain the principle, working system and the application of pH meter.

20. Explain in detail the different types solutions used in the clinical laboratories.

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S–4508

Sub. Code
23BMCA1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Microbiology and Clinical Lab Technology

Allied — BODY FLUID ANALYSIS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Blood.

2. Lymph.

3. Acetyl cholinesterase.

4. Gestation.

5. CSF.

6. Synovial fluid.

7. Haemogram.

8. Lupus Erythmatosus.

9. Immunohistochemistry.

10. Gram stain high complexity.

Part B (5 × 5 = 25)

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

11. (a) Write down the physical properties of body fluids.

Or

(b) State the functions of body fluids.

12. (a) Write a short note on foetal maturation.

Or

(b) List down the functions of amniotic fluid.

13. (a) Write down the causes of CSF pressure changes.

Or

(b) Write a short note on Immunologic tests.

14. (a) Explain the mechanism of coagulation of blood.

Or

(b) Comment on blood parasites.

15. (a) Give a short note on technique of low complexity tests.

Or

(b) Explain moderate complexity tests.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Evaluate the clinical abnormalities of fluid volume regulation.

17. Assess chromosome abnormalities.

18. Evaluate the microbiological and cytological tests performed for cerebrospinal fluid.

19. Explain the components of blood.

20. Analyze the principle and techniques of high complexity tests in a laboratory.

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S–4513

Sub. Code
23BMC2S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

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. Cell membrane.
2. Paracrine.
3. Nervous tissue.
4. Actin.
5. Pineal gland.
6. Synapse.
7. Albumin.
8. Cell death.
9. Anti coagulant.
10. Lymphoma.

Part B (5 × 5 = 25)

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

11. (a) With neat diagram explain the structure of a cell.

Or

(b) Write a short note on cell junctions.

12. (a) Explain the divisions of skeletal system.

Or

(b) List down the functions of tissues.

13. (a) Explain the properties of nerve fibre.

Or

(b) Cite the functions of brain.

14. (a) With neat diagram explain the components of blood.

Or

(b) Give a short note on anti coagulants.

15. (a) Explain platelet coagulating factors.

Or

(b) Write down the types of white blood cell disorders.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Assess the forms of intracellular signaling.

17. Explain the salient features and functions of bones.

18. Pituitary gland is a master gland – Justify.

19. Describe hematopoietic system of the body.

20. Evaluate the blood disorders.

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S–4515

Sub. Code
23BMC3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Microbiology and Clinical Laboratory Technology

CLINICAL BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Mention the various preservatives used for urine collection.

2. State the conditions associated with acid base imbalance.

3. Give the blood glucose levels during hypo and hyperglycemia.

4. What are disaccharides? Give examples for reducing disaccharides.

5. Lifestyle has an impact on progression of atherosclerosis. Justify citing two examples.

6. State the causes for Xanthomatosis.

7. How will be the metabolism of phenyl alanine affected, if Phenyl alanine hydroxylase is non-functional?

8. What are non protein nitrogen?

9. How are total, conjugated and non-conjugated bilirubin levels altered during obstructive jaundice?

10. What are bile pigments?

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

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

11. (a) Write the procedure for separation of serum and plasma.

Or

(b) Tabulate the buffer systems present in rbcs and blood plasma along with their significance.

12. (a) Outline the classification of different types of Diabetes.

Or

(b) Explain the symptoms and clinical features of Diabetes mellitus.

13. (a) Write an account on lipidosis.

Or

(b) Enumerate any five properties of lipids.

14. (a) How are amino acids classified based on charge, side chain and nutritional aspects?

Or

(b) Brief an account on Marasmus.

15. (a) Discuss about the deficiency state associated with Vitamin D.

Or

(b) How are serum enzymes useful for assessment of liver function?

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

Answer any **three** questions.

16. Discuss about the collection and preservation of blood, urine and feces.

17. Elaborate on the importance, principle and technique of GTT.

18. Outline the genetic defect, clinical and biochemical changes, diagnosis and management of cystinuria.

19. Elaborate on the etiology, clinical picture and complications of atherosclerosis.

20. Give a detailed account on kidney function tests.

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S–4516

Sub. Code
23BMC3S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

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** questions.

1. Virulence
2. Properdin
3. Base analogues
4. Interferon
5. Griseofulvin
6. Acyclovir
7. XLD agar
8. Hemagglutinin protein
9. Salk vaccine
10. Cirrhosis

Part B (5 × 5 = 25)

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

11. (a) Write briefly about the major virulence factors of gram negative bacteria.

Or

(b) Explain briefly about the importance normal flora in urogenital tract.

12. (a) Write briefly about principle of ELISA.

Or

(b) Discuss about the different selective medium used in microbiology laboratory.

13. (a) Write briefly about the mechanism of action of Amantadine.

Or

(b) Write briefly about the classification of cephalosporin.

14. (a) Discuss the laboratory diagnosis of Salmonella gastroenteritis.

Or

(b) Write briefly about the haeagglutination inhibition test.

15. (a) Discuss the treatment strategies for filariasis.

Or

(b) Write briefly about the risk factors associated with Amoebiosis.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the various factors involved in the host pathogen interaction.

17. Discuss about the culture and biochemical test included in identification of bacteria.

18. Discuss the classification and mode of action of macrolide antibiotics.

19. Explain in detail about the life cycle of malaria parasite.

20. Write in detail about the replication and laboratory diagnosis of Polio virus.

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