

BSc MLT - March - 2025

BLDE (DEEMED TO BE UNIVERSITY)
B.Sc. Medical Laboratory Technology

[Time: 3 Hours]

[Max. Marks: 80]

IV SEMESTER
PAPER - I (Fundamentals of Biochemistry II)
QP CODE: 8430

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

10X1 = 10 Marks

Long Questions

1. What is genetic code? Describe the characteristics of the genetic code. Add a note on the effects of mutations on genetic code.

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Describe the process of removal of ammonia from amino acids.
3. What is the difference between a strong acid/base and a weak acid/base?
4. What factors influence the metabolism of xenobiotics?
5. What is the role of biological oxidation in cellular respiration?
6. What are the main systems that regulate acid-base balance?
7. What are the essential amino acids? Name them.
8. Name the enzymes and their role in protein digestion.
9. Differentiate between positive nitrogen balance, negative nitrogen balance, and nitrogen equilibrium.
10. What factors can affect protein digestion and absorption?

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Importance of maintaining quality control in the clinical laboratory.
12. What is the anion gap, and why is it important in diagnosing metabolic acidosis?
13. Explain the role of nitrogen balance in the management of malnutrition.
14. Why is it crucial to understand xenobiotic metabolism in drug development?
15. Why urea formation is called a cyclic process.
16. What safety measures are necessary when handling radioactive isotopes in a laboratory setting?
17. Write the normal ranges for blood pH, pCO₂, and pO₂.
18. Note on PCR technique.
19. Explain the importance of standard operating procedures (SOPs) in a laboratory setting.
20. Role & Nutritional Significances of PUFA, MUFA, SFA.
21. Significance of the urea cycle.

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IV SEMESTER

PAPER - II (Fundamentals of Microbiology II)

QP CODE: 8431

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Classify Mycobacteria. Discuss Laboratory diagnosis of pulmonary tuberculosis

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Laboratory diagnosis of Urinary tract infection caused by E. coli
3. Prevention and control of Hospital Acquired Infection
4. Shigellosis
5. Laboratory Diagnosis of tetanus
6. Biomedical waste management
7. Laboratory diagnosis of infection caused by Staphylococcus aureus
8. Widal test
9. Laboratory Diagnosis of diphtheria
10. Laboratory Diagnosis of Enteric fever

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Classification of Streptococci
12. Enumerate infections caused by Acid fast bacilli
13. Enumerate three spore forming bacilli
14. Enumerate three Gram negative cocci
15. Enumerate three media used for vibrio cholerae
16. Enumerate three spore forming bacilli.
17. Morphology of Pneumococci
18. Enumerate infections caused by Klebsiella
19. Name 3 Zoonotic diseases
20. Infections caused by Pseudomonas aeruginosa
21. Name 3 anaerobic bacteria

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IV SEMESTER

PAPER - III (Hematology & Clinical Pathology II)

QP CODE: 8432

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Discuss in detail about the steps in tissue processing. Add a note on fixatives used in histopathology with examples. (6+4)

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Discuss the differences between transudate and exudate. Write two causes for each.
3. Classify Anemia. Describe peripheral smear findings and investigations in megaloblastic anemia.
4. Define hemostasis? Describe the different stages of hemostasis.
5. Discuss the protocol to be followed in disinfection of blood spillage.
6. Enlist stains used in cytology. Write the principle and procedure of Giemsa staining.
7. Write about anticoagulants used in hematology and their mechanism of action
8. Discuss about blood grouping and cross matching of blood
9. Describe about the chemical examination of urine.
10. Discuss various methods of collection of blood samples.

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Enumerate three decalcifying agents.
12. Write the normal counts of RBC, WBC and platelets.
13. Write the three features of an ideal peripheral blood smear.
14. Enlist three embedding medias used in histopathology.
15. Write the normal range for PT and APTT.
16. What is PAP smear? What is its significance?
17. Discuss the principle and procedure of H and E stain.(Hematoxylin and eosin)
18. Write the principle of automated hematology analyser.
19. What is ESR? Write the normal range in males and females.
20. Discuss the principle and procedure of Leishman stain.
21. Enlist 3 causes of microcytic hypochromic anemia.