

2/7/20 PM

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.

Long Questions

10X1 = 10 Marks

1. Discuss the general reactions of amino acid metabolism and explain how urea is formed in the body? (5+5)

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Write an essay on the concept of buffers and the importance of blood buffer systems.
3. Describe the different phases of cellular respiration.
4. Explain the role of cytochromes in biological oxidation.
5. Describe the process and importance of translation in protein synthesis.
6. Explain the biochemical basis and management of metabolic alkalosis.
7. What are the sources of proteins and how it is digested in the human body?
8. What are the principles and benefits of using radioactive tracers in medicine?
9. Explain the principles of laboratory record management and data entry.
10. Note on Protein Energy malnutrition (PEM)

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. What is meant by detoxification? Name any two enzymes involved.
12. Bence Jones proteins
13. Anion gap
14. Define and state the normal range of blood urea nitrogen (BUN).
15. What are essential Amino acid? Name them.
16. Mention two applications of PCR in medical diagnostics.
17. List two key steps in the quality control process of a biochemistry lab.
18. What are antioxidants? Name any two biological antioxidants.
19. State two major effects of radiation on biological tissues.
20. What is Nitrogen balance? Types of Nitrogen balance with one example.
21. Write the Reference Values of Serum Total Bilirubin, Conjugated Bilirubin & Unconjugated Bilirubin.

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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. Describe Laboratory diagnosis of Urinary Tract Infection caused by E. coli

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Lab Diagnosis of gonorrhea
3. Weil –Felix test
4. MRSA
5. Lab Diagnosis of Pulmonary Tuberculosis.
6. Laboratory Diagnosis of diphtheria.
7. Hospital Acquired Infection
8. Laboratory Diagnosis of Enteric fever
9. Biomedical waste management
10. Differences between VDRL and RPR

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Enumerate the Acid fast bacilli
 12. Classification of Streptococci
 13. Enumerate three diplococci
 14. Name three culture media used for Vibrio cholerae
 15. Enumerate 3 anaerobic bacteria
 16. Enumerate three spores forming bacilli.
 17. Describe the morphology of Pneumococci with diagram
 18. Enumerate infections caused by Staphylococci
 19. Name 3 Zoonotic diseases
 20. Name 3 Infections caused by Spirochaetes
 21. Standard precautions
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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 Universal safety precautions in detail. Add a note on protocol to be followed after needle stick injury and chemical spillage.

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Explain RBC indices and their clinical significance.
3. Describe the causes, laboratory findings, and classification of leukemias.
4. Write in detail about coagulation and hemostasis.
5. Explain different types of vacutainers and anticoagulants used in the laboratory.
6. Describe ABO blood grouping and Rh typing procedures.
7. Explain cross matching and its importance in blood banking.
8. Describe physical, chemical, and microscopic examination of urine.
9. Explain collection, processing, and interpretation of body fluids.
10. Write a note on histopathology tissue processing and fixation.

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. List any three causes for microcytic hypochromic anemia.
12. Mention the normal values of Hb, PCV, and RBC count.
13. List the complications of leukemia.
14. What are anticoagulants? Give examples.
15. Write the principle of hematoxylin and eosin staining.
16. Define pleural effusion and mention 2 causes.
17. What is decalcification? mention agent used.
18. Mention the three uses of cryostat section.
19. Write any two special stains used for fungi demonstration
20. List any three parts of a microscope.
21. Mention any three safety precautions followed in the laboratory.

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B.Sc. Medical Laboratory Technology

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[Max. Marks: 80]

V SEMESTER

PAPER - I (Clinical Biochemistry I)

QP CODE: 8530

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Define ketone bodies. Explain how they are synthesized and its significance

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Define pre analytical errors in lab. Describe any 2 in detail
3. What is cholesterol? Name the rate limiting enzyme in its synthesis. Write the reference range and write 2 causes for increased levels (1+1+ 1+2)
4. Describe how fats are digested. Name any disease associated with defect in lipid digestion and absorption.
5. Describe thyroid function tests
6. Define glycogen storage disorders and describe Von Gierke's disease
7. Quality control in lab and its importance. Name the different types
8. Define hormones. Describe mechanism of action of steroid hormones
9. What is urea? Write the reference range and list 4 Causes for hyper uremia. (1+1+3)
10. What is Alkaptonuria. Write the deficient enzyme and Describe the clinical features (1+1=3)

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Carnitine
12. Note on laboratory information system
13. Hyperuricemia and write 4 causes
14. Lab safety measures
15. Importance of barcoding of the blood samples
16. Note on point of care investigations.
17. Malabsorption of fats
18. Hypothyroidism- clinical features
19. Phlebotomy
20. Internal audit
21. Lab hazards

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V SEMESTER

PAPER - II (Medical Microbiology I)

QP CODE: 8531

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. List the malaria parasites. Describe life cycle and lab diagnosis of Plasmodium falciparum

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Stool concentration methods
3. Hydatid cyst
4. Kala-azar
5. Slide culture method
6. Dermatophytosis
7. Describe Life cycle, Pathogenesis and Laboratory diagnosis of round worm infection
8. Laboratory diagnosis of filarial infection
9. Laboratory diagnosis of candida infection
10. Mycetoma

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. KOH Preparation
12. Name the opportunistic infection in HIV infected Patient
13. NIH swab
14. Enumerate three parasites causing anaemia
15. Draw neat labelled diagram of hook worm
16. Germ tube test
17. Enumerate three Antifungal agents
18. Name Intestinal nematodes
19. Name the Aspergillus species
20. Name three dimorphic fungi
21. India ink preparation

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V SEMESTER

PAPER - III (Blood Bank & General Pathology I)

QP CODE: 8532

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Describe the organization and functioning of a modern blood bank, including standard procedures and equipment maintenance.

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Write in detail about the preparation, storage, shelf life and uses of blood components.
3. Discuss principles and interpretation of direct antiglobulin test.
4. Explain the causes and investigations of post-transfusion reactions.
5. Write a short note on cytology of the thyroid gland – normal and abnormal findings.
6. Describe the steps involved in fine needle aspiration cytology (FNAC) and mention its advantages.
7. Explain the collection, processing and examination of cerebrospinal fluid (CSF).
8. Discuss serum iron and TIBC estimation and their clinical significance.
9. Discuss about the steps of tissue processing in histopathology. Add a note on fixatives.
10. Describe the importance of record keeping and documentation in a blood bank.

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Define crossmatch and list two methods used.
12. Mention three uses of platelet concentrate.
13. Write any three features of a good blood donor.
14. Define antiglobulin reagent and write its use.
15. Mention three causes of anemia detected through peripheral smear.
16. List three stains used in histopathology.
17. Write two uses of Pap smear in diagnosis.
18. Mention two findings of CSF in tubercular meningitis.
19. Define hematuria and list two causes.
20. Mention two advantages of autologous transfusion.
21. Write any three anticoagulants used in blood bank.