

09/05/2025

Printing Pages : 1

Paper Code: BMLT-101

B

(SVSU:2024-25/R)

Enrollment No.

B.Sc. Medical Laboratory Technology (BMLT)

1st Year Examination

Subject: General Pathology and Hematology

Subject Code: BMLT- 101

Time: 3 Hours

M.M. 70

*Note: All questions are compulsory. Make diagrams wherever required.***Q1. Long answer type questions. Attempt any three.****(10×3=30)**

- Classify anemia and describe the laboratory investigation of megaloblastic anemia.
- Describe the principle and procedure of hemocytometry for red cell count.
- Discuss the types, causes, and lab diagnosis of leukemia.
- Write in detail about blood composition and its functions.

Q2. Short answer type questions. Attempt any six.**(5×6=30)**

- Define and classify the shock.
- Discuss about the types and uses of anticoagulants in hematology.
- Describe the laboratory diagnosis of hemolytic anemia.
- Describe any four coagulation screening tests.
- What is cytogenetic? Mention its role in hematology.
- Explain the formation and function of hemoglobin.
- What is a LE cell?

Q3. Very short answer type questions. Attempt any five.**(1×5=5)**

- Name one stain used for reticulocyte count.
- What is the full form of ESR?
- Define leukocytosis.
- Mention one clinical significance of peritoneal fluid analysis.
- Write a name of coagulation disorder.
- Write one function of platelets.

Q4. Multiple choice questions. Attempt all.**(1×5=5)**

- What we study in Cytology?
 - Study of cell
 - Study of Disease
 - Study of Tissue
 - None of these
- Which of these is used to stain blood smear?
 - Crystal violet
 - Giemsa stain
 - Hematoxylin
 - Gram stain
- The anticoagulant used in hematocrit is:
 - Heparin
 - EDTA
 - Citrate
 - Oxalate
- Blood cells are formed in:
 - Liver
 - Spleen
 - Bone marrow
 - Kidney
- Leukemia is a disorder of:
 - Platelets
 - Red blood cells
 - White blood cells
 - Plasma

Time: 3 Hours

M.M. 70

*Note: All questions are compulsory. Make diagrams wherever required.***Q1. Long answer type questions. Attempt any three.****(10x3=30)**

- Discuss the term culture media and explore their various types.
- What do you mean by immunity explore their types.
- Write about the Principle, procedure and result of Z.N staining technique.
- Draw a bacterial cell and explain their various parts in details.

Q2. Short answer type questions. Attempt any six.**(5x6=30)**

- What do you mean by Resident flora?
- Write down the differences between MIC and MBC.
- Define the various methods of sterilization.
- Define the various factors that affect the immunity.
- Draw the bacterial growth curve along with the all phases.
- Write about antibodies and their types.
- Define the term vaccination and their importance.
- List out the universal safety measures for microbiology laboratory.

Q 3. Very short answer type questions. Attempt any five.**(1x5=5)**

- Define binary fission.
- What do you mean by antibiotics?
- Define quality assurance.
- What do you mean by undefined media?
- Explore the various temperature ranges of Hot-air oven.
- Define Heptanes.

Q 4. Multiple choice questions. Attempt all.**(1x5=5)**

- In autoclave _____ temperature is used.
 - 121°C
 - 111°C
 - 100°C
 - 141°C
- A bacterium is made up with _____ cell.
 - Prokaryotic cell
 - Eukaryotic cell
 - Both I and ii
 - None of these
- Capsule of the bacteria is made up with _____.
 - Protein
 - Carbohydrate
 - Lipid
 - All of these
- In Gram staining technique _____ used as primary dye.
 - Methylene Blue
 - Crystal Violet
 - Safranin
 - Carbol fuchsin
- _____ known as the father of Immunology.
 - Louis pasteur
 - Robert koch
 - Edward Jenner
 - R.J Petri

Printing Pages : 1
Paper Code: BMLT-103

B

(SVSU:2024-25/R)

Enrollment No.

B.Sc. Medical Laboratory Technology (BMLT)
1st Year Examination
Subject: General Biochemistry
Subject Code: BMLT-103

Time: 3 Hours

M.M. 70

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Long answer type questions. Attempt any three.

(10x3=30)

- What is Amino acid? Describe the classification of amino acid on the basis of structure and chemical nature.
- What is Enzyme inhibition? Describe the reversible enzyme inhibition in details.
- What is Cell? Define the Chloroplast and endoplasmic reticulum with labeled diagram.
- What is RNA? Describe the classification of RNA.

Q2. Short answer type questions. Attempt any Six.

(5x6=30)

- Write the physical and chemical properties of Amino acid.
- What is Polysaccharide? Define starch and Glycogen with their structure.
- Explain double helix model of DNA.
- What is Lipoproteins? Describe the classification of lipoproteins.
- Describe the Secondary structure of Protein in details.
- Describe the Classification of enzyme.
- Define Saturated, Unsaturated and Essential fatty acid.

Q 3. Very short answer type questions. Attempt any five.

(1x5=5)

- What are the monomer units of Sucrose?
- Write the function of Nucleus.
- Write the oxidation reaction of Glucose.
- Write the name of basic amino acid.
- Write the EC number of alcohol dehydrogenase.
- Write the Chargaff's rule.
- Write the example of pentose sugar.

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- α -D-glucose and β -D-glucose are
 - Epimer
 - Anamer
 - Optical isomer
 - None of these
- Cellulose is the Polymer of
 - α -D-Glucose
 - β -D-Glucose
 - Both of these
 - None of These
- The main control system of cell is
 - Mitochondria
 - Chloroplast
 - Nucleus
 - None of these
- HDL is synthesized in
 - Liver
 - Adipose tissue
 - Intestine
 - Liver & Intestine
- The number of double bonds present in arachidonic acid is
 - 1
 - 2
 - 3
 - 4

Section (B) Physiology

Q1. Long answer type questions. Attempt anyone.

(10x1=10)

1. Write down the normal constituents of blood and their function.
2. Explain in detail about the urinary system and its importance in human body.

Q2. Short answer type questions. Attempt any three.

(5x3=15)

- a. Describe the structure and function of the human spinal cord.
- b. Discuss the role of hormones in the regulation of the menstrual cycle.
- c. Outline the components of the human immune system and their specific functions.
- d. What is the primary function of the spleen in the human body?
- e. How does the heart pump blood throughout the body?

Q3. Very short answer-type questions. Attempt any five.

(1x5=5)

- a. Normal count of RBC in males and females.
- b. Two Functions of Platelets.
- c. Two functions of epithelial tissue.
- d. What is the primary function of the liver?
- e. What is the function of the lymphatic system?
- f. What is the primary function of the skin?
- g. What is the function of the pancreas?

Q4. Multiple choice questions. Attempt all.

(1x5=5)

- a. What is the primary role of red blood cells?
 - i. To fight infections
 - ii. To carry oxygen
 - iii. To regulate body temperature
 - iv. To produce enzymes
- b. What is the primary function of the digestive system?
 - i. To remove waste
 - ii. To pump blood
 - iii. To break down food and absorb nutrients
 - iv. To produce oxygen
- c. Which system controls voluntary and involuntary actions in the body?
 - i. Endocrine system
 - ii. Respiratory system
 - iii. Nervous system
 - iv. Digestive system
- d. Which organ is responsible for formation of urine?
 - i. Liver
 - ii. Kidneys
 - iii. Lungs
 - iv. Pancreas
- e. What is the basic functional unit of the nervous system?
 - i. Muscle
 - ii. Neuron
 - iii. Hormone
 - iv. Axon

Printing Pages : 2

Paper Code: B.Sc. MLT/RIT/OPT/OTT -105

B

(SVSU:2024-25/R)

Enrollment No.

B.Sc. MLT/RIT/OPT/OTT/OTT(H.A)-1st Year
Subject: Computational Skills And Biostatistics
Subject Code: BMLT/BRIT/BOPT/BOTT/BOTT(H.A)- 105

Time: 3 Hours

M.M. 70

Note: All questions are compulsory. Make diagrams wherever required.

Section (A)
Computational Skills (M.M. 35)

Q1. Long answer type questions. Attempt anyone. **(10x1=10)**

- a. What are the characteristics of computers?
- b. What are size base computers and how many types are there?

Q2. Short answer type questions. Attempt any three. **(5x3=15)**

- a. What is computer?
- b. What is difference between hardware and software?
- c. Describe data and information.
- d. Write Short notes on about the types of Operating System.
- e. What is a mouse used for in a computer system?

Q 3. Very short answer type questions. Attempt any five. **(1x5=5)**

- a. How many types of printers are there
- b. What are the main components of a computer system?
- c. What is RAM, and why is it important?
- d. Explain the difference between system software and application software.
- e. What is hard disk?
- f. What is a computer monitor?

Q 4. Multiple choice questions. Attempt all. **(1x5=5)**

- a. Which of the following is the smallest unit of data in a computer?

i. Bit	ii. KB	iii. Nibble	iv. Byte
--------	--------	-------------	----------
- b. Which of the following is designed to control the operations of a computer?

i. User	ii. Application Software	iii. System Software	iv. Utility Software
---------	--------------------------	----------------------	----------------------
- c. Which of the following are physical devices of a computer?

i. Hardware	ii. Software	iii. System Software	iv. Package
-------------	--------------	----------------------	-------------
- d. Which of the following is not a type of computer on the basis of operation?

i. Digital	ii. Analog	iii Hybrid	iv Remote
------------	------------	------------	-----------
- e. Which of the following computers are lower than mainframe computers in terms of speed and storage capacity?

i. Mainframes	ii. Hybrid	iii. Mini	iv. Super
---------------	------------	-----------	-----------

Section (B)
Biostatistics (M.M. 35)

Q1. Long answer type questions. Attempt any two.

(10x2=20)

- a. The following numbers give the incubation period in days in ten consecutive patients of infectious hepatitis: 26,22,36,15,27,19,24,18,23 & 25. Calculate standard deviation.
- b. Define Hypothesis ? Write the steps of Hypothesis testing?
- c. What is measure of Dispersion? Discuss in detail type of Variability?

Q2. Short answer type questions. Attempt any two.

(5x2=10)

- a. What is Chi square test?
- b. Write one importance of Biostatistics.
- c. Define merits and demerits of mode
- d. What is normal curve?

Q 3. Very short answer type questions. Attempt any two.

(1x2=2)

- a. Define median.
- b. What is Skewness?
- c. What is frequency?

Q 4. Multiple choice questions. Attempt all.

(1x3=3)

- a. In a symmetrical distribution, the mean value is 30 and median value is 30. The value of mode can be:
i. 60 ii. 0 iii. 30 iv. 15
- b. The mode letter of the word "STATISTICS" is:
i. S ii. Both S and T iii. Both S and I iv. T
- c. A specific characteristic of a population is called:
i. Statistic ii. Parameter iii. Variable iv. Sample