

M.M. 70

Q1. Long answer type questions. Attempt any three.

(10x3=30)

- Q2. Short answer type questions. Attempt any five.**

(5x5=25)

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

(1x5=5)

- Q 4. Multiple choice questions. Attempt all.**

(1x10=10)

- a. Which of the following is a common cause of reversible cell injury?**
i. Oxygen deprivation ii. Severe physical trauma iii. Inflammation iv. Hypoxia
- b. In which of the following types of cell injury does the cell shrink and undergo condensation of chromatin?**
i. Necrosis ii. Apoptosis iii. Cellular swelling iv. Fatty change
- c. Which of the following cellular adaptations is most commonly seen in the endometrial lining during pregnancy?**
i. Hyperplasia ii. Metaplasia iii. Atrophy iv. Dysplasia
- d. Which of the following adaptations involves an increase in the number of cells in a tissue?**
i. Hypertrophy ii. Hyperplasia iii. Atrophy iv. Metaplasia
- e. Which type of necrosis is typically seen in the heart following an infarction?**
i. Caseous necrosis ii. Fat necrosis iii. Coagulative necrosis iv. Liquefactive necrosis
- f. Which of the following is a common cause of caseous necrosis?**
i. Myocardial infarction ii. Tuberculosis infection iii. Pancreatitis iv. Traumatic injury
- g. Which type of necrosis is characterized by the formation of a thick, yellowish, cheesy material?**
i. Coagulative necrosis ii. Fat necrosis iii. Liquefactive necrosis iv. Caseous necrosis
- h. Which of the following molecules plays a key role in the initiation of apoptosis?**
i. ATP ii. Caspases iii. Free radicals iv. Phospholipids
- i. Which of the following factors is most commonly involved in the activation of apoptosis?**
i. DNA damage ii. Increased blood flow iii. Cellular overgrowth iv. Reduced oxygen levels
- j. Which type of gangrene is associated with the presence of gas-producing bacteria, often leading to tissue crepitus?**
i. Dry gangrene ii. Wet gangrene iii. Gas gangrene iv. Internal gangrene

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Q1. Long answer type questions. Attempt any three.

(10x3=30)

- Describe the Krebs's cycle and its significance.
- What are the Lipids? Describe the Classification and function of Lipids.
- What are the Ketone bodies? Describe Synthesis and utilization of Ketone bodies.
- Describe the Glycine synthesis in details.
- Describe the Replication in prokaryotic in details.

Q2. Short answer type questions. Attempt any five.

(5x5=25)

- Write notes on denaturation and renaturation.
- What are the Lipoproteins? Describe the Classification of Lipoprotein.
- Describe the Purines and Pyrimidine with their structure
- Describe the properties of amino acid.
- What are the Enzymes? Define Cofactor, coenzyme and isoenzymes.
- Write the notes on saturated, unsaturated and essential fatty acid.
- Describe Urea cycle in details.

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

(1x5=5)

- Write the Work of t-RNA.
- Write the name of the pentose sugar present in DNA.
- Write the example of non-reducing disaccharide.
- Write the location of enzymes of Beta oxidation of Fatty acid.
- Write the epimers of glucose.
- Write the name of aromatic amino acid.
- Write the name of Nitrogen base present in lecithin.

Q 4. Multiple choice questions. Attempt all.

(1x10=10)

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|--|------------------------|------------------------|---------------------------|---------------------|
| a. The ATP molecule Produced in aerobic Glycolysis:- | (i) 2 | (ii) 4 | (iii) 6 | (iv) 8. |
| b. Hydroxyl group containing amino acid is:- | (i) Tryptophan | (ii) Methionine | (iii) Serine | (iv) None |
| c. The Nitrogen base present in Cephalin is:- | (i) Choline | (ii) Ethanolamine | (iii) Both of these | (iv) None of these |
| d. mRNA is used in the synthesis of :- | (i) Carbohydrates | (ii) Lipids | (iii) Proteins | (iv) None of these. |
| e. Beta oxidation of fatty acid completed in | (i) Cytoplasm | (ii) Mitochondria | (iii) Both of these | (iv) None of these |
| f. The Enzymes of fatty acid synthesis occurs in:- | (i) Mitochondria | (ii) Cytoplasm | (iii) Nucleus | (iv) None |
| g. The Nitrogen base Present in DNA not in RNA:- | (i) Thymine | (ii) Uracil | (iii) Both of These | (iv)None of these. |
| h. The formation of RNA from DNA is known as | (i) Replication | (ii) Transcription | (iii) Translation | (iv)None of these. |
| i. The starch is the polymer of : | i. α -D-Glucose | ii. β -D-Glucose | iii. α -D-Fructose | iv. Deoxyribose |
| j. The chemical nature of Enzymes is known as | i. Lipids | ii. Carbohydrates | iii. Protein | iv. None of these |

Printing Pages :1

Paper Code: MMLT -104

B

(SVSU:2024-25/R)

Enrollment No.																			
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M.Sc. Medical Laboratory Technology (MMLT)IST Year 1st SemesterSubject: Human Anatomy & Human Physiology

Time: 3hrs

M.M. 70

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

Human Anatomy (Max. Marks – 35)

- Q1 Long answer type questions. Attempt any one** 10X1=10
 a Describe Gross structure of heart in details.
 b Describe Classification of joints in details.
- Q2 Short answer type questions. Attempt any three.** 5X3=15
 a Describe the structure of a cell.
 b Describe gross structure of kidney.
 c Describe external features of spinal cord.
 d Describe external features of thyroid gland.
- Q3 Very short answer type questions. Attempt all.** 1X5=5
 a Enumerate parts of small intestine.
 b Enumerate parts of excretory system.
 c Define endocrine gland.
 d Enumerate structures in hilum of lung.
 e Enumerate parts of a vertebra.
- Q4 Multiple Choice Question. Attempt all.** 1X5=5
 a Patella is a
 i. Sessamoid bone ii. Short bone iii. Pneumatic bone iv. None of the above
 b Elbow joint is
 i. Hinge Joint ii. Condylar Joint iii. Ball and socket joint iv. Pivot joint
 c Atlas is
 i. 1st cervical vertebra ii. 2nd cervical vertebra iii. 3rd cervical vertebra iv. 4th cervical vertebra
 d Aorta arises from:-
 i. Right ventricle ii. Left ventricle iii. Right atrium iv. Left atrium
 e Common bile duct opens in:-
 i. First part of duodenum ii. Second part of duodenum iii. Third part of duodenum iv. Fourth part of duodenum

Human Physiology (Max. Marks – 35)

- Q1. Long answers type questions. Attempt any one.** (10X1=10)
 a. What are dietary fibres? What is their role in digestion?
 b. Describe in detail Lung volumes and capacities
- Q2. Short answer type questions. Attempt any three.** (5X3=15)
 a. Explain the Functions of thyroid gland.
 b. Define the Factors affecting heart rate.
 c. Define the Factors affecting body temperature.
 d. Explain Surfactant & its clinical significance.
 e. Classify reflexes. Give two examples of each type.
- Q3. Very short type questions. Attempt any five** (1X5=5)
 a. What is Turner's syndrome?
 b. Define GFR.
 c. Define End Diastolic Volume.
 d. Enumerate hormones of parathyroid gland.
 e. What is the Functions of Gall Bladder?
 f. Explore uses of blood grouping.
 g. Define Apoptosis.
- Q4. Multiple choice questions. Attempt all** (1X5=5)
 a. The power house of cell is
 i. mitochondria ii. Golgi apparatus iii. lysosomes iv. Golgi complex
 b. Conversion of fibrinogen to fibrin occurs by
 i. prothrombin ii. thrombin iii. thromboplastin iv. platelets
 c. Large intestine absorbs all except
 i. water ii. minerals iii. glucose iv. protein
 d. The hormone activated in lung
 i. renin ii. vasopressin iii. Angiotensin I iv. prostaglandin
 e. Somato sensory cortex lies in
 i. frontal lobe ii. Parietal lobe iii. Temporal lobe iv. Occipital lobe

Enrollment No.

M.Sc. Medical Laboratory Technology (MMLT)**1st year 1st Semester****Subject: Biostatistics and Computational Skills****Time: 3 Hours****M.M. 70***Note: All questions are compulsory. Make diagrams wherever required.***Biostatistics M.M. 35****Q1. Long answer type questions. Attempt any one.****(10x1=10)**

a. Write a note on Normal Distribution?

b. The following is a frequency distribution of height in cm.

Height: 150-155 155-160 160-165 165-170 170-175

Frequency: 4 19 31 23 3

Calculate mean and mode.

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

- Write note on Stratified Sampling.
- Write note on Mann Whitney U test.
- Differentiate paired and unpaired t test.

Q 3. Very short answer type questions. Attempt all.**(1x4=4)**

- Define the Nominal Scale.
- What is Statistic?
- Define Systematic Sampling.
- Define Power of a test.

Q 4. Multiple choice questions. Attempt all.**(1x6=6)**

- If 80 values are arranged in ascending order, the middle value is:
 - Mean
 - Median
 - 40th percentile
 - 2nd tertile
- The selection of cricket team for the world cup is called:
 - Random Sampling
 - Systematic Sampling
 - Purposive Sampling
 - Stratified Sampling
- The number of pages that Carolyn wrote in her journal each day from Monday to Friday is shown below: 9,8,12,6,10. What is the mean number of pages she wrote per day?
 - 5
 - 6
 - 9
 - 11
- Extreme scores will have the following effect on the median of an examination:
 - They may have no effect on it
 - They may tend to raise it
 - They may tend to lower
 - None of the above
- A symmetrical distribution has mean equal to 4. Its mode will be
 - 2
 - 3
 - 4
 - 5
- The null hypothesis in the chi square test states that:
 - The rows and columns in the table are associated
 - The rows and columns in the table are not associated
 - Neither of the two
 - Both of them

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

Q1. Long answer type questions. Attempt any one.

(10x1=10)

- What are size base computers and how many types are there?
- What is an Operating system? Explain its types.

Q2. Short answer type questions. Attempt any three.

(5x3=15)

- Explain the difference between impact and non-impact printer?
- Write Short notes on Function and types of Operating System.
- Give an example of data and information?
- Write the different types of memory.
- What is a mouse used for in a computer system?

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

(1x5=5)

- Explain any 2-output devices.
- What is the function of an ALU?
- What is RAM, and why is it important?
- What is a browser cache?
- What is a software update, and why are they important?
- How many types of printers are there?
- What type of device is a scanner?

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- Which of the following is the correct definition of Computer?
 - Computer is a machine or device that can be programmed to perform arithmetical or logic operation sequences automatically
 - Computer understands only binary language which is written in the form of 0s & 1s
 - Computer is a programmable electronic device that stores, retrieves, and processes the data
 - All of the mentioned
- Which of the following are physical devices of a computer?
 - Hardware
 - Software
 - System Software
 - Package
- Which of the following language does the computer understand?
 - Computer understands only C Language
 - Computer understands only Assembly Language
 - Computer understands only Binary Language
 - Computer understands only BASIC
- Which of the following is not a type of computer on the basis of operation?
 - Digital
 - Analog
 - Hybrid
 - Remote
- Which of the following is the brain of the computer?
 - Central Processing Unit
 - Memory
 - Arithmetic and Logic unit
 - Control unit