4. ANIMAL TISSUES

TEACHING TASK (Page 56 – 58)

Multiple Choice Questions (Single Correct Answer)

1. Intestine absorbs the digested food materials. What type of epithelial cells are responsible for that?

Answer: B) Columnar epithelium Explanation: The inner lining of the intestine contains columnar epithelial cells, which are specialized for absorption and secretion. These cells have microvilli to increase surface area for efficient absorption of digested food materials.

2. Which type of tissue changes the diameter of a blood vessel?

Answer: C) Muscle Explanation: Smooth muscle tissue in the walls of blood vessels (particularly arteries and arterioles) contracts or relaxes to change the vessel's diameter, regulating blood flow and pressure.

3. Which of the following helps in repair of tissue and fills up the space inside the organ?

Answer: C) Areolar Explanation: Areolar tissue is a loose connective tissue that fills spaces between organs, supports tissue repair, and provides a framework for epithelial tissue.

4. Select the incorrect sentence.

Answer: C) Tendon are non-fibrous tissue and fragile Explanation: Tendons are fibrous connective tissues that connect muscles to bones and are strong, not fragile. The other statements are correct: blood contains a matrix with proteins, salts, and hormones; ligaments connect bones; and cartilage is a connective tissue.

5. A person met with an accident in which two long bones of hand were disjointed. Which among the following may be the possible reason?

Answer: C) Ligament Explanation: Ligaments connect bones to bones and stabilize joints. A dislocation (bones becoming disjointed) is typically due to a tear or stretch in the ligament.

6. Which of the cells is found in the cartilaginous tissue of the body?

Answer: D) Chondrocytes Explanation: Chondrocytes are the specialized cells found in cartilage, responsible for maintaining the cartilaginous matrix.

7. While doing work and running, you move your organs like hands, legs, etc. Which among the following is correct?

Answer: D) Skeletal muscles contract and pull the tendon to move the bones Explanation: Skeletal muscles, which are voluntary, contract and pull on tendons (which connect muscles to bones) to produce movement of bones at joints.

8. Strain is caused by excessive pulling of: Answer:

A) Muscles Explanation: A strain is an injury caused by overstretching or tearing of muscles or tendons. While tendons can also be involved, muscles are primarily associated with strains.

9. A bone left in dilute HCl for about 3 days will:

Answer: B) become soft and elastic Explanation: Dilute HCl dissolves the mineral component (calcium phosphate) of the bone, leaving the organic matrix (collagen), which makes the bone soft and elastic.

10. The muscular tissue which functions throughout life continuously without fatigue is:

Answer: B) Cardiac muscle Explanation: Cardiac muscle is involuntary, highly resistant to fatigue, and contracts rhythmically throughout life to pump blood.

11. Sheath nuclei, Schwann cells, and nodes of Ranvier are found in:

Answer: A) Nervous Explanation: Schwann cells form the myelin sheath around axons in the peripheral nervous system, and nodes of Ranvier are gaps in the myelin sheath, all of which are components of nervous tissue.

Multiple Choice Questions (More Than One Correct Answer)

12. Choose the wrong statement: (i) The nature of matrix differs according to the function of the tissue (ii) Fats are stored below the skin and in between the internal organs (iii) Epithelial tissues have intercellular spaces between them (iv) Cells of striated muscles are multinucleate and unbranched

Answer: B) Only iii Explanation:

- (i) Correct: The matrix composition varies depending on tissue function (e.g., bone vs. cartilage).
- (ii) Correct: Adipose tissue stores fats below the skin and between organs.
- (iii) Incorrect: Epithelial tissues have tightly packed cells with minimal intercellular spaces.
- (iv) Correct: Striated (skeletal) muscles are multinucleate and unbranched, unlike cardiac muscles, which are branched.

13. Which muscles act involuntarily? (i) Striated muscles (ii) Smooth muscles (iii) Cardiac muscles (iv) Skeletal muscles

Answer: B) (ii) and (iii) Explanation:

- Smooth muscles (ii) and cardiac muscles (iii) are involuntary, meaning they function without conscious control.
- Striated muscles (i) and skeletal muscles (iv) are the same and are voluntary.

Assertion & Reason

14. Assertion (A): Non-striated muscles are said to be voluntary in nature. Reason (R): Non-striated muscles can be moved according to will.

Answer: D) A & R are false Explanation: Non-striated (smooth) muscles are involuntary, not voluntary, and cannot be moved at will. Both the assertion and reason are incorrect.

15. Assertion (A): Smooth muscle fibers do not appear to be striated. Reason (R): This is due to regular alternate arrangement of thick and thin filaments in smooth muscle fibers.

Answer: C) A is true, R is false Explanation:

- Assertion is true: Smooth muscles lack striations.
- Reason is false: Smooth muscles lack striations because their actin and myosin filaments are not arranged in a regular, alternating pattern like in striated muscles.

Match the Following

16. Match the following:

1. Fluid connective tissue → c. Blood
2. Filling of space inside the organs → a. Areolar tissue
3. Striated muscle → d. Skeletal muscle
4. Adipose tissue → b. Subcutaneous layer

Answer: A) 1-c, 2-a, 3-d, 4-b Explanation:

- Fluid connective tissue is blood (c).
- Areolar tissue (a) fills spaces inside organs.
- Striated muscle refers to skeletal muscle (d).
- Adipose tissue is found in the subcutaneous layer (b) for fat storage.

17. Match the following:

1. Surface of joints → d. Cartilage
2. Columnar stratified epithelium → a. Ducts of glands
3. Transitional epithelium → b. Urinary bladder
4. Ciliated epithelium → c. Respiratory tract

Answer: C) 1-d, 2-a, 3-b, 4-c Explanation:

- Cartilage (d) covers the surface of joints for smooth movement.
- Columnar stratified epithelium (a) is found in ducts of glands.
- Transitional epithelium (b) lines the urinary bladder, allowing stretching.
- Ciliated epithelium (c) is found in the respiratory tract to move mucus.

Comprehension-Based Questions

18. What is the pH of blood?

Answer: B) 7.4 Explanation: The paragraph states that blood is slightly alkaline with a pH of 7.35–7.4.

19. Study of blood is called:

Answer: B) Haematology Explanation: The paragraph explicitly mentions that the study of blood is called haematology.

20. The main components of blood:

Answer: D) All the above Explanation: The paragraph lists plasma, erythrocytes, leucocytes, and platelets as the main components of blood.

21. How much water is present in plasma?

Answer: D) 90% Explanation: The paragraph states that blood plasma contains 90–92% water.

22. What is the element present in hemoglobin?

Answer: B) Fe+2 Explanation: Hemoglobin contains iron (Fe^{2+}), which binds oxygen for transport.

23. Role of hemoglobin in blood:

Answer: B) Transport of gases Explanation: Hemoglobin's primary role is to transport oxygen and carbon dioxide in the blood.

LEARNER'S TASK (page 59 – 62)

BEGINNERS (Level - I)

Multiple Choice Questions (Single Correct Answer)

1. Cartilage is not found in:

Answer: C) Kidney Explanation: Cartilage is a flexible connective tissue found in places like the nose, ear, and larynx, where it provides support and structure. The kidney, however, does not contain cartilage as it is primarily composed of epithelial, connective, and muscular tissues.

2. Fats are stored in the human body as:

Answer: B) Adipose tissue Explanation: Adipose tissue is a specialized connective tissue that stores fat, providing energy reserves and insulation. Cuboidal epithelium, bones, and cartilage do not serve this function.

3. Bone matrix is rich in:

Answer: B) Calcium and Phosphorus Explanation: The bone matrix is primarily composed of calcium phosphate, which gives bones their hardness and strength. Fluoride, potassium, and other elements are present in trace amounts but are not the primary components.

4. Contractile proteins are found in:

Answer: C) Muscles Explanation: Contractile proteins, such as actin and myosin, are found in muscle tissue, enabling movement through contraction. Bones, blood, and cartilage do not contain these proteins.

5. Voluntary muscles are found in:

Answer: B) Legs Explanation: Voluntary muscles (skeletal muscles) are under conscious control and are found in areas like the legs, which are used for locomotion. The alimentary canal, iris, and bronchi contain involuntary smooth muscles.

6. Nerve cell does not contain:

Answer: C) Tendon Explanation: Nerve cells (neurons) are part of the nervous system, found in the brain, spinal cord, and nerves. Tendons, which are connective tissues connecting muscles to bones, are not components of nerve cells.

7. Nerve cell does not contain:

Answer: C) Tendons Explanation: Nerve cells (neurons) contain axons, nerve endings, and dendrites, which are essential for transmitting nerve impulses. Tendons are not part of nerve cells, as they are connective tissues.

8. Adipose tissue is:

Answer: A) Connective Tissue Explanation: Adipose tissue is a type of loose connective tissue specialized for fat storage. It is not supporting, vascular, or epithelial tissue.

9. Nails, hooves, and horns are examples of:

Answer: D) Epidermal tissue Explanation: Nails, hooves, and horns are derived from the epidermal layer of the skin, specifically from keratinized stratified squamous epithelium, not from connective or bony tissues.

10. Bone-forming cells are:

Answer: A) Osteoblast Explanation: Osteoblasts are cells responsible for bone formation by secreting the bone matrix. Osteocytes maintain bone, while chondroblasts and chondroclasts are involved in cartilage formation and breakdown, respectively.

11. The strongest muscle in the body is present in:

Answer: C) Jaw Explanation: The masseter muscle in the jaw is considered the strongest muscle in the human body based on its force relative to size, used for chewing. Unstriped (smooth), cardiac, and skeletal muscles are not as strong in this context.

12. Mast cells occur in:

Answer: A) Connective tissue Explanation: Mast cells are found in connective tissue and are involved in immune responses, releasing histamine during inflammation. They are not typically found in epithelial, skeletal, or nervous tissues.

ACHIEVERS (Level - II)

1. What will happen if:

a. Ligament gets overstretched?

Answer: If a ligament gets overstretched, it may lead to a **sprain** or, in severe cases, a **tear**. Ligaments are tough, fibrous connective tissues that connect bones to bones, stabilizing joints. Overstretching can cause pain, swelling, reduced joint stability, and limited movement. Severe cases may require medical intervention, such as immobilization or surgery.

b. Heparin is absent in blood?

Answer: If heparin, a natural anticoagulant, is absent in the blood, it can lead to **excessive blood clotting** (thrombosis). Heparin prevents blood clot formation by inhibiting clotting factors. Without it, there is an increased risk of forming clots in blood vessels, which can cause blockages, leading to conditions like deep vein thrombosis, pulmonary embolism, or stroke.

c. Striated muscles contract rapidly for longer duration?

Answer: If striated (skeletal) muscles contract rapidly for a prolonged period, they may experience **fatigue** due to depletion of energy stores (ATP and glycogen) and accumulation of lactic acid. This can lead to muscle cramps, soreness, or temporary loss of function. Prolonged overexertion may also cause muscle strain or damage.

2. Connective Tissue Questions:

a. Name the tissue A? Answer: Tissue A is **areolar tissue**. **Explanation:** Areolar tissue is a loose connective tissue that binds the skin to underlying tissues, such as muscles or bones. It provides support, elasticity, and a medium for nutrient exchange.

b. Name the tissue B? Answer: Tissue B is **tendon**. **Explanation:** Tendons are dense connective tissues made up of white collagen fibers, connecting muscles to bones. They are non-elastic, tough, and strong to withstand the pulling forces during muscle contraction.

3. Correct the following incorrect statements:

a. Muscle cells: carry messages.

Corrected Answer: Muscle cells **contract and relax to cause movement**. **Explanation:** Muscle cells (myocytes) are responsible for movement through contraction and relaxation. Carrying messages is a function of **nerve cells** (neurons).

b. Nerve cells contract and relax to cause movement.

Corrected Answer: Nerve cells **transmit impulses to carry messages**. **Explanation:** Nerve cells (neurons) conduct electrical impulses to transmit signals for communication within the body. Contraction and relaxation are functions of **muscle cells**.

c. Blood conducts water, minerals, and organic solutes from one part of the organism to other parts.

Corrected Answer: Blood **transports oxygen, nutrients, hormones, and waste products** throughout the body. **Explanation:** While blood does transport water, minerals, and organic solutes, its primary role is to carry oxygen, nutrients (like glucose), hormones, and waste products (like carbon dioxide) to and from cells, not just conduction of solutes.

4. Give reasons why:

a. Blood is a connective tissue.

Answer: Blood is classified as a connective tissue because it consists of cells (erythrocytes, leucocytes, and platelets) suspended in a fluid matrix called **plasma**. Like other connective tissues, it originates from mesenchyme, connects different parts of the body, and supports functions like nutrient transport, immune response, and waste removal.

b. Muscles contain contractile proteins.

Answer: Muscles contain contractile proteins, such as **actin and myosin**, because these proteins enable muscle fibers to shorten (contract) and relax,

facilitating movement. These proteins slide past each other during contraction, allowing muscles to perform mechanical work.

c. Muscles of the heart are involuntary.

Answer: Heart muscles (cardiac muscles) are involuntary because they contract rhythmically without conscious control to pump blood continuously throughout life. This is regulated by the autonomic nervous system and the heart's intrinsic conduction system, ensuring consistent function without fatigue.

5. Name the following:

a. Tissue that forms the inner lining of our mouth:

Answer: Stratified squamous epithelium Explanation: The inner lining of the mouth is made of stratified squamous epithelium, which is protective and multilayered to withstand mechanical stress.

b. Tissue that connects muscle to bone in humans:

Answer: Tendon Explanation: Tendons are dense connective tissues that attach muscles to bones, transmitting the force of muscle contraction to produce movement.

c. Tissue that stores fat in our body:

Answer: Adipose tissue Explanation: Adipose tissue, a type of connective tissue, stores fat for energy, insulation, and cushioning.

d. Connective tissue with a fluid matrix:

Answer: Blood Explanation: Blood is a connective tissue with a fluid matrix (plasma) containing cells like erythrocytes, leucocytes, and platelets.

e. Tissue present in the brain:

Answer: Nervous tissue Explanation: The brain is primarily composed of nervous tissue, consisting of neurons and neuroglia, responsible for processing and transmitting information.

6. Identify the type of tissue in the following:

Skin:

Answer: Epithelial tissue (stratified squamous epithelium) Explanation: The outer layer of the skin (epidermis) is composed of stratified squamous epithelium, which provides protection against external factors.

Bone:

Answer: Connective tissue Explanation: Bone is a specialized connective tissue with a hard matrix of calcium phosphate, providing structural support.

Lining of kidney tubule:

Answer: Simple cuboidal epithelium Explanation: The lining of kidney tubules consists of simple cuboidal epithelium, which facilitates absorption and secretion in the kidneys.

EXPLORERS (Level - III)

Multiple Choice Questions (One or More Correct)

1. Which muscles act involuntarily?

- Options: i) Striated muscles, ii) Smooth muscles, iii) Cardiac muscles, iv) Skeletal muscles
- Choices: A) i & ii, B) ii & iii, C) iii & iv, D) i & iv

Solution:

- **Striated muscles**: These include skeletal and cardiac muscles, characterized by a striped appearance. Skeletal muscles are voluntary, while cardiac muscles are involuntary.
- **Smooth muscles**: Found in walls of internal organs (e.g., stomach, intestines), these are involuntary and lack striations.
- **Cardiac muscles**: Found in the heart, these are involuntary and striated.
- **Skeletal muscles**: These are voluntary and striated, controlled consciously for movement.

Since the question asks for muscles that act *involuntarily*, we focus on smooth and cardiac muscles:

- Smooth muscles (ii) are involuntary.
- Cardiac muscles (iii) are involuntary.
- Striated muscles (i) include both voluntary (skeletal) and involuntary (cardiac), so this option is partially correct but not specific.

- Skeletal muscles (iv) are voluntary, so not correct.

Thus, the most precise answer is **ii & iii**.

Answer: B) ii & iii

2. Which of the following statements is incorrect?

- Statements: i. Areolar tissue is one of the most widely distributed connective tissues in the body. ii. Tendons connect bone to bone. iii. Ligament connects muscle to bone. iv. Cartilage is the non-porous tissue.
- Choices: A) i, ii, iii & iv, B) ii & iii, C) i & iii, D) iii & iv

Solution:

- **i. Areolar tissue is one of the most widely distributed connective tissues in the body**: This is **correct**. Areolar tissue is a loose connective tissue found widely, supporting organs and filling spaces.
- **ii. Tendons connect bone to bone**: This is **incorrect**. Tendons connect *muscles to bones*. *Ligaments* connect bones to bones.
- **iii. Ligament connects muscle to bone**: This is **incorrect**. Ligaments connect *bones to bones*, not muscles to bones.
- **iv. Cartilage is the non-porous tissue**: This is **correct**. Cartilage lacks blood vessels and is non-porous, receiving nutrients via diffusion.

Since statements ii and iii are incorrect, the correct choice is **ii & iii**.

Answer: B) ii & iii

3. Which of the following is incorrect?

- Statements: i. RBC of mammals lack nucleus when matured. ii. WBC have amoeboid movements. iii. Platelets play an important role in blood clotting. iv. Lymph consists of plasma and WBC.
- Choices: A) i, ii & iv, B) i & iii, C) iii & iv, D) None

Solution:

- **i. RBC of mammals lack nucleus when matured**: This is **correct**. Mature red blood cells (RBCs) in mammals are anucleate to maximize hemoglobin content for oxygen transport.
- **ii. WBC have amoeboid movements**: This is **correct**. White blood cells (WBCs), especially neutrophils and macrophages, exhibit amoeboid movement to navigate tissues and engulf pathogens.

- **iii. Platelets play an important role in blood clotting**: This is **correct**. Platelets (thrombocytes) are critical for hemostasis, forming clots to stop bleeding.
- **iv. Lymph consists of plasma and WBC**: This is **correct**. Lymph is a fluid derived from blood plasma, containing white blood cells (especially lymphocytes) but lacking RBCs and platelets.

Since all statements are correct, the correct choice is **None**.

Answer: D) None

Assertion & Reason Questions

Instructions: Choose the correct option based on:

- A) Assertion (A) and Reason (R) are true, and R explains A.
- B) A and R are true, but R doesn't explain A.
- C) A is true, R is false.
- D) A and R are false.

4. Assertion (A): Presence of connective tissue inside the brain is essential for conduction of nerve impulse.

- **Reason (R): Connective tissue holds together the nerve cells of the brain.**

Solution:

- **Assertion**: The brain primarily consists of nervous tissue (neurons and glial cells), not connective tissue, for conducting nerve impulses. Connective tissue (e.g., meninges) provides structural support outside the brain but is not essential for impulse conduction. Thus, A is **false**.
- **Reason**: Connective tissue, such as the meninges, does hold and protect nerve cells externally, but this is not directly related to impulse conduction. However, within the brain, glial cells (not connective tissue) support neurons. R is **partially true** but misleading in this context, so considered **false** for the specific role.

Since both A and R are false, the correct choice is **D**.

Answer: D) A and R are false

5. Assertion (A): Compound epithelium covers surfaces exposed to mechanical or chemical abrasions.

- **Reason (R): Protection of underlying tissues is the major function of simple epithelium.**

Solution:

- **Assertion**: Compound epithelium (stratified, transitional) is multilayered and found in areas subject to abrasion (e.g., skin, mouth). This is **true**, as it protects against mechanical and chemical stress.
- **Reason**: Simple epithelium (single-layered) is involved in functions like diffusion, absorption, or secretion (e.g., in alveoli, intestines), not primarily protection. Protection is a key function of *compound epithelium*. Thus, R is **false**.

Since A is true and R is false, the correct choice is **C**.

Answer: C) A is true, R is false

6. Assertion (A): Materials are exchanged between epithelial and connective tissue by diffusion.

- **Reason (R): Blood vessels are absent in epithelial tissue.**

Solution:

- **Assertion**: Epithelial tissue lacks blood vessels (avascular) and relies on diffusion from underlying connective tissue for nutrient and waste exchange. This is **true**.
- **Reason**: The absence of blood vessels in epithelial tissue necessitates diffusion for material exchange, which explains the assertion. R is **true** and explains A.

Since A and R are true, and R explains A, the correct choice is **A**.

Answer: A) A and R are true, and R explains A

Matrix-Match Type Questions

7. Match the following:

- Column I: 1. Epithelial tissue, 2. Muscular tissue, 3. Connective tissue, 4. Nervous tissue

- Column II: a. Mesoderm, b. Transmission of impulses, c. Contraction and relaxation, d. Ecto, meso & endoderm
- Choices: A. 1-c, 2-a, 3-d, 4-b, B. 1-c, 2-b, 3-d, 4-a, C. 1-d, 2-c, 3-a, 4-b, D. 1-b, 2-a, 3-d, 4-c

Solution:

- **Epithelial tissue**: Derived from ectoderm, mesoderm, and endoderm (e.g., skin from ectoderm, gut lining from endoderm). Matches **d**.
- **Muscular tissue**: Responsible for movement via contraction and relaxation. Matches **c**.
- **Connective tissue**: Derived from mesoderm (e.g., bone, blood). Matches **a**.
- **Nervous tissue**: Responsible for transmission of impulses. Matches **b**.

Correct matches: 1-d, 2-c, 3-a, 4-b.

Answer: C) 1-d, 2-c, 3-a, 4-b

8. Match the following:

- Column I: 1. Areolar, 2. Adipose, 3. Cartilage, 4. Bone
- Column II: a. Osteocytes, b. Chondroblasts, c. Fibroblasts, d. Adipocytes
- Choices: A. 1-c, 2-a, 3-d, 4-b, B. 1-c, 2-b, 3-d, 4-a, C. 1-d, 2-c, 3-a, 4-b, D. 1-c, 2-d, 3-b, 4-a

Solution:

- **Areolar**: Loose connective tissue with fibroblasts (cells producing fibers). Matches **c**.
- **Adipose**: Fat tissue with adipocytes (fat-storing cells). Matches **d**.
- **Cartilage**: Contains chondroblasts (cells forming cartilage matrix). Matches **b**.
- **Bone**: Contains osteocytes (mature bone cells). Matches **a**.

Correct matches: 1-c, 2-d, 3-b, 4-a.

Answer: D) 1-c, 2-d, 3-b, 4-a

Comprehension-Based Questions

Paragraph Summary: The nervous system comprises neurons and glial cells (astrocytes, oligodendrocytes, microglial cells). Astrocytes are large, form the blood-brain barrier, and aid in repair. Oligodendrocytes form myelin sheaths in the CNS. Microglial cells are small, perform phagocytosis, and have feathery processes.

9. Which are the smallest glial cells?

- Options: A. Astrocytes, B. Oligodendrocytes, C. Microglial cells, D. Neurons

Solution: The paragraph states that microglial cells are the **smallest** in size with few feathery processes.

Answer: C) Microglial cells

10. Which glial cells show phagocytosis process?

- Options: A. Neurons, B. Microglial cells, C. Oligodendrocytes, D. Osteocytes

Solution: The paragraph specifies that microglial cells help in **phagocytosis**.

Answer: B) Microglial cells

11. These cells form the blood-brain barrier.

- Options: A. Osteocytes, B. Oligodendrocytes, C. Microglial cells, D. Nerve cells

Solution: The paragraph states that **astrocytes** form the blood-brain barrier. Since astrocytes are not listed, and none of the options (osteocytes, oligodendrocytes, microglial cells, nerve cells) perform this function, there seems to be a mismatch. However, based on standard biology, astrocytes are the correct cells, but they are not an option. Assuming a possible error in the question, none of the given options are correct, but we select the closest non-answer contextually.

Answer: None (Astrocytes, not listed). If forced to choose, **C) Microglial cells** is incorrect but least contradictory, though this is a stretch. **Note**: This question may have an error, as astrocytes are missing.

12. These cells are more in number.

- Options: A. Osteocytes, B. Oligodendrocytes, C. Microglial cells, D. Neurons

Solution: The paragraph states that **astrocytes** form the maximum number of glial cells. Since astrocytes are not an option, and the question likely

refers to glial cells, we evaluate the given options. Neurons are not glial cells, and among glial cells listed (oligodendrocytes, microglial cells), the paragraph implies astrocytes (not listed) are most numerous. This suggests a possible question error. Assuming the intent is glial cells, none match perfectly.

Answer: None (Astrocytes, not listed). If forced, **B) Oligodendrocytes** is a reasonable guess but not supported by the paragraph directly.

13. In the absence of Schwann cells, which one forms the myelin sheath around axons?

- Options: A. Osteocytes, B. Oligodendrocytes, C. Microglial cells, D. Mast cells

Solution: The paragraph clearly states that **oligodendrocytes** form the myelin sheath in the CNS by spirally wrapping nerve fibers, especially in the absence of Schwann cells (which function in the PNS).

Answer: B) Oligodendrocytes

RESEARCHERS (Level - IV)

1. Histamines are secreted by (CPMT 1998) Correct

Answer: A. Mast cell Explanation: Histamines are chemical mediators released by mast cells, a type of immune cell, during allergic reactions or inflammatory responses. Kupffer cells are liver macrophages, macrophages are immune cells that engulf pathogens, and Nissl's granules are found in neurons, not related to histamine secretion.

2. White fibres are found in (CPMT 1999) Correct

Answer: C. Collagen Explanation: White fibres are collagen fibres, which provide strength and flexibility in connective tissues like tendons and ligaments. They are not primarily found in skin, bone, or muscles, though these may contain some collagen.

3. The junction between the axon of one neuron and the dendrites of the next neuron is called (CPMT 2000, CBSE 1998) Correct

Answer: B. Synapse Explanation: A synapse is the junction where the axon of one neuron communicates with the dendrite (or cell body) of another neuron, allowing signal transmission. Joints are skeletal connections, and the other options are not standard terms for this structure.

4. Nissl's granules are present in (CPMT 2000) Correct

Answer: B. Cyton Explanation: Nissl's granules are rough endoplasmic reticulum structures found in the cyton (cell body) of neurons, involved in protein synthesis. They are not present in axons, dendrites, or Schwann cells.

5. Tendon and ligaments are special types of (CPMT 2001, 2003, CBSE 1999) Correct

Answer: D. Fibrous connective tissue Explanation: Tendons and ligaments are dense fibrous connective tissues. Tendons connect muscles to bones, and ligaments connect bones to bones, providing structural support. They are not nervous, epithelial, or muscular tissues.

6. What will happen if ligaments are cut or broken (CBSE 2002) Correct

Answer: A. Bones will move freely at joints Explanation: Ligaments stabilize joints by connecting bones. If ligaments are cut or broken, the joint becomes unstable, allowing bones to move freely, which can lead to dislocation or injury. The other options incorrectly describe the outcome.