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### Practice questions on Unit 2 – Cell Biology

1. Which type of microscope utilizes two lenses, the eyepiece lens and the objective lens?
  - A) Electron microscope
  - B) Compound microscope
  - C) Light microscope
  - D) Scanning microscope
  
2. What is the purpose of the rotating nosepiece in a compound microscope?
  - A) To adjust the magnification
  - B) To change the objective lens
  - C) To adjust the focus
  - D) To rotate the stage clips
  
3. How is the overall magnification of a compound microscope calculated?
  - A) By adding the magnification of the objective and eyepiece lenses
  - B) By subtracting the magnification of the objective and eyepiece lenses
  - C) By multiplying the magnification of the objective and eyepiece lenses
  - D) By dividing the magnification of the objective and eyepiece lenses
  
4. If the magnification of the objective lens is  $\times 10$  and the eyepiece lens is also  $\times 10$ , what is the overall magnification of the microscope?
  - A)  $\times 10$
  - B)  $\times 20$
  - C)  $\times 100$
  - D)  $\times 200$
  
5. Which component of the compound microscope controls the amount of light passing through the specimen?
  - A) Iris diaphragm
  - B) Focusing knobs
  - C) Stage clips

- D) Mirror
6. What is the function of the stage clips in a compound microscope?
- A) To adjust the focus
  - B) To hold the specimen in place
  - C) To change the magnification
  - D) To control the light intensity
7. What type of wavelength does an electron beam have compared to light?
- A) Longer
  - B) Shorter
  - C) Similar
  - D) Variable
8. Which type of microscope is widely used for looking at cells?
- A) Electron microscope
  - B) Scanning microscope
  - C) Compound microscope
  - D) Fluorescence microscope
9. If the objective lens used is  $\times 40$  and the eyepiece lens is  $\times 10$ , what is the total magnification of the microscope?
- A)  $\times 50$
  - B)  $\times 100$
  - C)  $\times 400$
  - D)  $\times 1000$
10. What is the purpose of having multiple objective lenses in a compound microscope?
- A) To adjust the focus
  - B) To change the magnification
  - C) To control the light intensity

- D) To rotate the stage clips
11. What is one of the biggest advantages of using a light microscope?
- A) Higher magnification than an electron microscope
  - B) Ability to observe living cells directly
  - C) Greater resolving power than an electron microscope
  - D) Ability to see three-dimensional structures of cells
12. Which type of microscope utilizes an electron beam to form an image?
- A) Compound microscope
  - B) Light microscope
  - C) Scanning electron microscope
  - D) Transmission electron microscope
13. What is the main disadvantage of using an electron microscope?
- A) Limited resolving power
  - B) Requirement for staining of specimens
  - C) Inability to observe living material
  - D) High cost and limited accessibility
14. How does the resolving power of a microscope relate to its wavelength?
- A) Higher resolving power with longer wavelength
  - B) Lower resolving power with shorter wavelength
  - C) Higher resolving power with shorter wavelength
  - D) No relationship between resolving power and wavelength
15. Why are specimens examined in a vacuum in electron microscopes?
- A) To prevent contamination of the specimen
  - B) To enhance the resolving power of the microscope
  - C) To avoid scattering of the electron beam by air

- D) To facilitate staining of the specimen
16. What is the purpose of staining specimens for light microscopy?
- A) To increase the resolving power of the microscope
  - B) To make cells appear three-dimensional
  - C) To visualize specific structures or types of cells
  - D) To prevent the specimen from deteriorating
17. Which type of microscopy is commonly used to observe the surface of structures and provide a three-dimensional view?
- A) Light microscopy
  - B) Transmission electron microscopy
  - C) Scanning electron microscopy
  - D) Compound microscopy
18. What is the primary limitation of light microscopes in terms of magnification?
- A) Limited availability
  - B) Requirement for staining
  - C) Resolving power determined by wavelength
  - D) Inability to observe living material
19. Why do electron microscopes require a constant source of electricity?
- A) To maintain a vacuum environment
  - B) To enhance the resolving power of the microscope
  - C) To control the temperature and pressure within the microscope
  - D) To produce the electron beam necessary for imaging
20. What is the purpose of fixing and staining specimens for electron microscopy?
- A) To enhance the contrast of the specimen
  - B) To prevent the specimen from being damaged
  - C) To facilitate the visualization of living material

- D) To reduce the cost of sample preparation
21. The maximum magnification of a light microscope would make a person:
- A) 3.5 m tall
  - B) 35 m tall
  - C) 3.5 km tall
  - D) 35 km tall
22. The largest single cell is:
- A) an amoeba
  - B) a jelly fish
  - C) an unfertilised ostrich egg
  - D) an unfertilised human egg
23. Which of the following is not an advantage of the light microscope?
- A) It can be used anywhere without electricity.
  - B) Its resolving power is limited by the wavelength of light.
  - C) It is relatively light so can be carried out into the field for research.
  - D) It is relatively cheap.
24. Which of the following is the main advantage of the electron microscope?
- A) It's very expensive.
  - B) Specimens are examined in a vacuum so must be dead.
  - C) It needs a constant temperature and pressure.
  - D) It gives a greatly increased magnification and resolution over the light microscope.
25. Which of the following cellular structures is correctly matched to its function?
- A) Mitochondria respiration. carry out cellular

- B) Ribosome involved in lipid synthesis
- C) Nucleus support plant cells.
- D) Cell wall - carry genetic information.

26. The net movement of water from high concentration of water to low concentration of water through partially permeable membrane is

- A) Diffusion.
- B) Active transport
- C) Facilitated diffusion.
- D) Osmosis.

27. How does water move in plants? By

- A) Active transport
- B) Force pumped mechanism
- C) Utilizing energy
- D) Passive process

28. Which of the following practices is correct when a specimen is observed using a light microscope?

- A) Switch off the light of the microscope's built lamp.
- B) Adjust the iris diaphragm to avoid the entrance of light
- C) Use fine focusing knob to move the stage up and down.
- D) Set up the lowest power lens in place at the beginning.

29. Cell theory states that

- A) All living things are made from a single cell.
- B) All cells have some features in common
- C) Cells are the basic unit of life.
- D) Cells are smaller units of perform specialized job.

30. This item is based on the following lists of structures of cells.

1. Chloroplast
2. Ribosome
3. Endoplasmic reticulum
4. Cell wall
5. Mitochondria
6. Vacuole

Which of the following structures listed above are found in both plant and animal cells?

- A) 1,3,6
- B) 2, 3, 5
- C) 2, 4, 6
- D) 3, 4, 5

31. When a plant cell gets plasmolyzed, the

- A) Surrounding fluid of the cell is less concentrated than the inside.
- B) Inside pressure increases until no water can enter into the cell.
- C) Cell becomes hard and rigid
- D) Vacuole shrinks and the cell becomes less rigid

32. A biology student demonstrated osmosis using onion epidermal cells. She focused the epidermal cells on the microscope with a drop of concentrated sucrose solution. After waiting for 30 minutes, she observed the cells and they became

- A) Turgid
- B) Plasmolyzed
- C) Swollen
- D) No change

33. Which scientist is credited with designing one of the first working optical microscopes and observing cells in thin sections of cork?

- A) Robert Hooke
- B) Matthias Schleiden



- C) Theodore Schwann
  - D) Gregor Mendel
34. What is the main function of the nucleus in a cell?
- A) Producing energy for the cell
  - B) Controlling cell activities and containing genetic material
  - C) Carrying out cellular respiration
  - D) Forming a barrier around the cell
35. What percentage of the cytoplasm in a cell is composed of water?
- A) 20%
  - B) 50%
  - C) 70%
  - D) 90%
36. Which organelle is known as the powerhouse of the cell and is responsible for cellular respiration?
- A) Nucleus
  - B) Cell membrane
  - C) Mitochondria
  - D) Endoplasmic reticulum
37. What is the function of ribosomes in a cell?
- A) Carrying out cellular respiration
  - B) Controlling cell activities
  - C) Synthesizing proteins
  - D) Linking the nucleus with the cell membrane
38. Which organelle forms a barrier around the outside of the cell and controls the passage of substances in and out?
- A) Nucleus

- B) Mitochondria
  - C) Ribosomes
  - D) Cell membrane
39. What is the function of the endoplasmic reticulum in a cell?
- A) Carrying out cellular respiration
  - B) Synthesizing proteins
  - C) Controlling cell activities
  - D) Forming a barrier around the cell
40. What is the term used to describe the sensitivity of an organism to changes in its surroundings?
- A) Nutrition
  - B) Respiration
  - C) Irritability
  - D) Growth
41. Which statement accurately describes the cell membrane?
- A) It is selectively permeable, controlling the movement of substances in and out of the cell.
  - B) It is the powerhouse of the cell, responsible for cellular respiration.
  - C) It contains the genetic material and controls all cell activities.
  - D) It links the nucleus with the cell membrane and synthesizes proteins.
42. What is the main function of ribosomes in a cell?
- A) Synthesizing proteins
  - B) Carrying out cellular respiration
  - C) Controlling cell activities
  - D) Forming a barrier around the cell

42. Why do cells have organelles?
- A) To create chemical chaos within the cell
  - B) To control the rate of specific reactions with enzymes
  - C) To prevent explosions in the laboratory test tube
  - D) To mix up different chemical processes
  - E) To maintain a single reaction within the cell
43. Where are most of the enzymes controlling the reactions of respiration found?
- A) Nucleus
  - B) Cell membrane
  - C) Mitochondria
  - D) Endoplasmic reticulum
  - E) Ribosomes
44. What is the main function of the cell wall in plant cells?
- A) Strengthening the cell and providing support
  - B) Containing chlorophyll for photosynthesis
  - C) Holding cell sap and minerals
  - D) Producing energy from light
  - E) Controlling the movement of substances in and out of the cell
45. Which pigment is found in chloroplasts and is responsible for giving plants their green color?
- A) Hemoglobin
  - B) Melanin
  - C) Chlorophyll
  - D) Carotene
  - E) Anthocyanin
46. What is the main purpose of the permanent vacuole in plant cells?
- A) To absorb energy from light

- B) To synthesize proteins
  - C) To contain enzymes for cellular respiration
  - D) To maintain cell rigidity and support
  - E) To control the rate of specific reactions
47. What term describes cells that have become adapted to carry out specific functions in the body?
- A) Undifferentiated cells
  - B) Embryonic stem cells
  - C) Differentiated cells
  - D) Specialised cells
48. During cell differentiation, what process involves some genes being switched on and others being switched off?
- A) Mitosis
  - B) Meiosis
  - C) Transcription
  - D) Epigenetics
49. Specialised cells are often grouped together to form what structure in the body?
- A) Organelles
  - B) Chromosomes
  - C) Nuclei
  - D) Tissues
50. Which type of cells have adaptations such as a large number of mitochondria to support their high energy usage?
- A) Epithelial cells
  - B) Muscle cells
  - C) Nerve cells
  - D) Red blood cells



51. Which of the following functions is NOT typically associated with epithelial cells?

- A) Protecting underlying tissues
- C) Secretion of hormones
- C) Diffusion of materials
- D) Movement of substances through tubes

52. Female sex cells are known as:

- A) Sperm
- B) Ova
- C) Oocytes
- D) Zygotes

53. What structure of sperm cells contains digestive enzymes used for breaking down the outer layers of the egg?

- A) Nucleus
- B) Acrosome
- C) Tail
- D) Mitochondria

54. Which type of cells are responsible for transmitting electrical nerve impulses throughout the body?

- A) Epithelial cells
- B) Muscle cells
- C) Nerve cells
- D) Red blood cells

55. Which of the following is not an organelle within a cell?

- A) nucleus
- B) chloroplast
- C) mitochondria

D) cytoplasm

56. Which of the following is not one of the seven life processes that characterise living things?

- A) movement
- B) language
- C) reproduction
- D) respiration

57. Which of the following is NOT a function of epithelial tissue in the human body?

- A) Protection against infection
- B) Facilitation of nutrient absorption
- C) Transmission of electrical impulses
- D) Secretion of hormones

58. One of these is a tissue in the human body. Which one?

- A) heart
- B) stomach
- C) muscle
- D) uterus

59. Which of the following tissues is responsible for joining different parts of the body together?

- A) Epithelial tissue
- B) Nervous tissue
- C) Muscle tissue
- D) Connective tissue

60. What is the primary function of striated muscle cells?

- A) Secreting hormones
- B) Transmitting electrical impulses

- C) Facilitating diffusion of materials
- D) Contracting and relaxing for movement

Answer Key

1. B) Compound microscope

Explanation: As stated in the passage, a compound microscope utilizes two lenses, the eyepiece lens and the objective lens.

2. B) To change the objective lens

Explanation: The rotating nosepiece in a compound microscope is used to switch between different objective lenses, allowing for different levels of magnification.

3. C) By multiplying the magnification of the objective and eyepiece lenses

Explanation: The overall magnification of a compound microscope is calculated by multiplying the magnification of the objective lens by the magnification of the eyepiece lens.

4. D)  $\times 100$

Explanation: Given that both the objective lens and the eyepiece lens have a magnification of  $\times 10$ , the overall magnification is calculated by multiplying them together ( $\times 10 \times \times 10 = \times 100$ ).

5. C) Iris diaphragm

Explanation: The iris diaphragm, located under the stage, controls the amount of light passing through the specimen, thereby adjusting the brightness and contrast of the image.

6. B) To hold the specimen in place



Explanation: Stage clips are used to secure the specimen onto the stage of the microscope, preventing it from moving during observation.

7. B) Shorter

Explanation: The passage states that electron beams have a shorter wavelength than light.

8. C) Compound microscope

Explanation: Compound microscopes are widely used for observing cells due to their ability to achieve high magnification and resolution.

9. C)  $\times 400$

Explanation: When using a  $\times 40$  objective lens and a  $\times 10$  eyepiece lens, the total magnification is calculated by multiplying them together ( $\times 40 \times \times 10 = \times 400$ ).

10. B) To change the magnification

Explanation: Having multiple objective lenses allows users to switch between different levels of magnification, enabling the observation of specimens at various levels of detail.

11. B) Ability to observe living cells directly

Explanation: One of the biggest advantages of using a light microscope, as mentioned in the passage, is the ability to see living plants and animals or parts of them directly. This allows biologists to observe living cells and verify if what they see on prepared slides of dead tissue is consistent with real living organisms.



12. C) Transmission electron microscope

Explanation: The passage describes the electron microscope, which utilizes an electron beam to form an image. The transmission electron microscope is specifically mentioned as the type of electron microscope commonly used to produce electron micrographs of thin slices of specimens.

13. D) High cost and limited accessibility

Explanation: The passage outlines several disadvantages of electron microscopes, including their high cost, requirement for a controlled environment, and limited accessibility to scientists outside of top research laboratories.

14. C) Higher resolving power with shorter wavelength

Explanation: The resolving power of a microscope is dependent on the wavelength used. Smaller wavelengths, such as those of electrons used in electron microscopes, result in higher resolving power and the ability to distinguish finer details in the specimen.

15. C) To avoid scattering of the electron beam by air

Explanation: Specimens in electron microscopes are examined in a vacuum to prevent the scattering of the electron beam by air molecules, which could distort the image and reduce resolution.

16. C) To visualize specific structures or types of cells

Explanation: Staining specimens for light microscopy is done to enhance contrast and visualize specific structures or types of cells more clearly under the microscope.

17. C) Scanning electron microscopy

Explanation: Scanning electron microscopy is commonly used to observe the surface of structures and provide a three-dimensional view by scanning the surface with a focused electron beam.

18. C) Resolving power determined by wavelength

Explanation: The resolving power of light microscopes is limited by the wavelength of light, as stated in the passage. This limitation affects the microscope's ability to magnify specimens, especially living cells.

19. A) To maintain a vacuum environment

Explanation: Electron microscopes require a constant source of electricity to maintain a vacuum environment, necessary for the electron beam to travel without interference from air molecules.

20. A) To enhance the contrast of the specimen

Explanation: Fixing and staining specimens for electron microscopy are done to enhance the contrast of the specimen, making it easier to visualize specific structures and details under the microscope.

21. B) 35 m tall

Explanation: The maximum magnification of a light microscope typically ranges from about 1000x to 2000x. If we consider the average height of a person to be around 1.7 meters, then at maximum magnification, a person would appear 1000 times taller, which is 1.7 meters \* 1000 = 1700 meters, or 1.7 kilometers. Therefore, the closest option is B) 35 m tall.

22. C) an unfertilised ostrich egg

Explanation: The largest single cell known is an unfertilized ostrich egg. Ostrich eggs are significantly larger than the cells of other organisms mentioned in the options.

23. B) Its resolving power is limited by the wavelength of light.

Explanation: The statement "Its resolving power is limited by the wavelength of light" is true and represents a limitation, not an advantage, of the light microscope. The other options represent advantages of the light microscope, such as portability (option A), ability to be used without electricity (option C), and relative affordability (option D).

24. D) It gives a greatly increased magnification and resolution over the light microscope.

Explanation: The main advantage of the electron microscope, as stated in the passage, is that it provides greatly increased magnification and resolution over the light microscope. Options A, B, and C represent disadvantages or requirements of the electron microscope, not advantages.

25. A) Mitochondria respiration. carry out cellular

Explanation: Mitochondria are correctly matched with their function of carrying out cellular respiration. Mitochondria are the organelles responsible for producing energy (in the form of ATP) through the process of cellular respiration.

26. D) Osmosis.

Explanation: Osmosis is the net movement of water from an area of high water concentration to an area of low water concentration through a partially permeable membrane. This process does not require energy input and is passive.

27. D) Passive process

Explanation: The movement of water in plants occurs through a passive process known as osmosis. Osmosis allows water to move from areas of high water concentration (such as the soil) to areas of low water concentration (such as the roots) without the need for energy input.

28. D) Set up the lowest power lens in place at the beginning.

Explanation: When observing a specimen using a light microscope, it is correct to start with the lowest power lens (usually the scanning lens) in place. This allows for easier location and focusing of the specimen before higher magnification is used.

29. C) Cells are the basic unit of life.

Explanation: Cell theory states that cells are the basic unit of life, which makes option C the correct statement. Option A is incorrect because not all living things are made from a single cell, and option B is incorrect because while all cells share common features, not all features are common among all cells. Option D is incorrect because cells can perform specialized functions.



30. D) 3, 4, 5

Explanation: The structures found in both plant and animal cells are endoplasmic reticulum (3), cell wall (4), and mitochondria (5).

31. D) Vacuole shrinks and the cell becomes less rigid

Explanation: When a plant cell becomes plasmolysed, the vacuole loses water and shrinks, causing the cell to become less rigid. Option D correctly describes this process.

32. B) Plasmolysed

Explanation: Plasmolysis occurs when plant cells lose water due to being placed in a hypertonic solution, causing the cell membrane to shrink away from the cell wall. Therefore, after being placed in a concentrated sucrose solution, the onion epidermal cells observed by the student would become plasmolysed.

33. A) Robert Hooke

Explanation: Robert Hooke is credited with designing one of the first working optical microscopes and observing cells in thin sections of cork. This discovery led to the initial understanding of cells as the basic units of life.

34. B) Controlling cell activities and containing genetic material

Explanation: The nucleus controls all the activities of the cell and contains the genetic material in the form of chromosomes. It is often referred to as the control center of the cell.



35. C) 70%

Explanation: Approximately 70% of the cytoplasm in a cell is composed of water. The cytoplasm is a liquid gel in which most of the chemical reactions needed for life take place.

36. C) Mitochondria

Explanation: Mitochondria are known as the powerhouse of the cell because they are responsible for carrying out most of the reactions of cellular respiration, whereby energy is released from the food in a form the cell can use.

37. C) Synthesizing proteins

Explanation: Ribosomes are organelles involved in protein synthesis, which is the process by which the cell makes all the enzymes that control the reactions of the cell.

38. D) Cell membrane

Explanation: The cell membrane forms a barrier around the outside of the cell and controls the passage of substances in and out. It is selectively permeable, allowing some substances to pass through while restricting others.

39. D) Forming a barrier around the cell

Explanation: The endoplasmic reticulum is involved in various cellular functions, including synthesizing proteins and lipids, as well as forming a network of tubules that link the nucleus with the cell membrane.



40. C) Irritability

Explanation: Irritability refers to the sensitivity of an organism to changes in its surroundings. It is one of the seven life processes common to most living organisms.

41. A) It is selectively permeable, controlling the movement of substances in and out of the cell.

Explanation: The cell membrane forms a barrier around the cell and controls the passage of substances such as carbon dioxide, oxygen, and water in and out of the cell. It is selectively permeable, allowing some substances to pass through while restricting others.

42. A) Synthesizing proteins

Explanation: The main function of ribosomes in a cell is to synthesize proteins. Ribosomes are often found on the endoplasmic reticulum and in the cytoplasm, where they play a crucial role in protein synthesis.

42. B) To control the rate of specific reactions with enzymes

Explanation: Cells have organelles to control the rate of specific reactions with enzymes. Enzymes are proteins designed to control very specific reactions within the cell, ensuring that each reaction occurs at the appropriate rate and without interference from other reactions.

43. Answer: C) Mitochondria



Explanation: Most of the enzymes controlling the reactions of respiration are found in the mitochondria. Mitochondria are known as the powerhouse of the cell and are responsible for carrying out most of the reactions of cellular respiration.

44. Answer: A) Strengthening the cell and providing support

Explanation: The main function of the cell wall in plant cells is to strengthen the cell and provide support. The cell wall is made mainly of cellulose, a carbohydrate that gives structural support to the cell and prevents it from collapsing under pressure.

45. Answer: C) Chlorophyll

Explanation: Chlorophyll is the pigment found in chloroplasts and is responsible for giving plants their green color. Chlorophyll absorbs light energy during photosynthesis, allowing plants to convert light energy into chemical energy.

46. Answer: D) To maintain cell rigidity and support

Explanation: The main purpose of the permanent vacuole in plant cells is to maintain cell rigidity and support. The vacuole is filled with cell sap, a liquid containing sugars, mineral ions, and other chemicals dissolved in water. The pressure of the vacuole against the cell wall helps to keep the cell rigid, providing structural support to the plant.

47.D) Specialised cells

Explanation: Specialised cells are those that have become adapted to carry out specific functions in the body. They have undergone differentiation to perform particular roles, such as red blood cells carrying oxygen or nerve cells transmitting electrical impulses.

48. C) Transcription

Explanation: During cell differentiation, some genes are switched on (activated) while others are switched off (deactivated). This process involves transcription, where the genetic information encoded in DNA is transcribed into messenger RNA (mRNA) for protein synthesis.

49. D) Tissues

Explanation: Specialised cells often group together to form tissues. Tissues are groups of cells with similar structures and functions that work together to perform specific tasks in the body. Examples of tissues include epithelial tissue, muscle tissue, and nervous tissue.

50. B) Muscle cells

Explanation: Muscle cells, also known as muscle fibers, require a large amount of energy for contraction and relaxation. Therefore, they have a high number of mitochondria, which are organelles responsible for producing energy in the form of ATP through cellular respiration.

51. B) Secretion of hormones

Explanation: Epithelial cells are involved in protecting underlying tissues, facilitating the diffusion of materials, and sometimes movement of substances through tubes. However, the secretion of hormones is typically associated with endocrine glands, which are specialized structures composed of secretory epithelial cells.

52. B) Ova

Explanation: Female sex cells, or gametes, are called ova. These are produced by the ovaries and contain half the number of chromosomes as normal body cells due to the process of meiosis. Ova are fertilized by sperm during sexual reproduction.

## 53. B) Acrosome

Explanation: The acrosome is a specialized structure located at the head of a sperm cell. It contains digestive enzymes that are released to break down the outer layers of the egg during fertilization, allowing the sperm to penetrate and fertilize the egg.

## 54. C) Nerve cells

Explanation: Nerve cells, or neurons, are responsible for transmitting electrical nerve impulses throughout the body. These impulses carry information from one part of the body to another, allowing for communication and coordination of various physiological processes.

## 55. D) cytoplasm

Explanation: The cytoplasm is not an organelle but rather a jelly-like substance that fills the cell and surrounds the organelles. Organelles are specialized structures within a cell that perform specific functions. The nucleus contains the cell's genetic material, chloroplasts are found in plant cells and are responsible for photosynthesis, and mitochondria are the powerhouse of the cell, producing energy.

## 56. B) Language

Explanation: The seven life processes that characterize living things are movement, reproduction, sensitivity, growth, respiration, excretion, and nutrition. Language is not



considered one of these processes. Instead, it is a complex form of communication typically associated with humans.

57. C) Transmission of electrical impulses

Explanation: Epithelial tissue serves several vital functions in the human body, including protection against infection (A), facilitation of nutrient absorption (B), and secretion of hormones (D). However, the transmission of electrical impulses is primarily carried out by nervous tissue, particularly neurons, which are specialized cells designed for transmitting electrical signals. Epithelial tissue, while important for many other functions, does not play a direct role in transmitting electrical impulses.

58. C) muscle

Explanation: Muscle tissue is the correct answer. In the human body, muscle tissue consists of specialized cells that have the ability to contract and relax, allowing for movement and locomotion. The heart and the uterus are organs composed of various types of tissues, while the stomach is an organ that contains muscle tissue but is not solely composed of it.

59. D) connective tissue

Explanation: Connective tissue is responsible for joining different parts of the body together. It provides structural support, connects and anchors tissues and organs, and helps to transport nutrients and waste throughout the body. Epithelial tissue lines body surfaces, nervous tissue transmits electrical impulses, and muscle tissue facilitates movement but does not primarily join different parts of the body together.

60. D) Contracting and relaxing for movement

Explanation: Striated muscle cells, also known as skeletal muscle cells, are responsible for voluntary movements such as walking, running, and lifting objects. These cells contract and relax in response to nervous impulses, resulting in the movement of bones and joints. The striations in the muscle cells are due to the arrangement of actin and myosin filaments, which slide past each other during contraction, leading to muscle shortening and movement.