Public Library · FBISE / NBF

Biology Grade 9 — Chapter 5

Tissues, Organs and Organ Systems

by Public Library

Independent practice MCQs from the supplied Class 9 Biology notes pack. Total: 50 questions.

A. Important / Main Topics

1. The levels of organization from smallest to largest are:

(A) Atoms → Molecules → Organelles → Cells → Tissues → Organs → Organ systems → Organism
(B) Cells → Tissues → Organs → Organ systems → Organism
(C) Organism → Organs → Tissues → Cells → Organelles
(D) Molecules → Atoms → Tissues → Cells → Organ systems

Correct Answer: A

Explanation: The text lists the levels of organization as atomic, molecular, organelle, cellular, tissue, organ, organ system, and organism.

2. A group of cells with similar functions is called a:

(A) Organ
(B) Tissue
(C) Organ system
(D) Molecule

Correct Answer: B

Explanation: Tissues are groups of cells with similar functions.

3. Organs are structures made up of:

(A) One type of tissue
(B) Only cells
(C) Two or more types of tissues
(D) Only organelles

Correct Answer: C

Explanation: Organs are made up of two or more types of tissues organized to carry out a particular function.

4. The tendency to maintain a stable, relatively constant internal environment is called:

(A) Metabolism
(B) Evolution
(C) Respiration
(D) Homeostasis

Correct Answer: D

Explanation: Homeostasis is the tendency to maintain a s.

5. Which plant tissue covers and protects the plant?

(A) Dermal tissue
(B) Ground tissue
(C) Vascular tissue
(D) Connective tissue

Correct Answer: A

Explanation: Dermal tissue — this correctly answers the question.

6. Which plant tissue serves as a site for photosynthesis, storage, and support?

(A) Dermal tissue
(B) Ground tissue
(C) Vascular tissue
(D) Nervous tissue

Correct Answer: B

Explanation: Ground tissue serves as a site for photosynthesis, storage, and support.

7. Xylem and phloem are examples of:

(A) Dermal tissue
(B) Ground tissue
(C) Vascular tissue
(D) Connective tissue

Correct Answer: C

Explanation: Xylem and phloem are the two types of vascular tissue, responsible for transport.

8. Which of the following is a type of animal tissue?

(A) Dermal
(B) Ground
(C) Vascular
(D) Epithelial

Correct Answer: D

Explanation: The four main types of animal tissues are epithelial, connective, muscular, and nervous tissue.

9. Which animal tissue covers and lines body surfaces?

(A) Epithelial tissue
(B) Connective tissue
(C) Muscular tissue
(D) Nervous tissue

Correct Answer: A

Explanation: Epithelial tissue — this correctly answers the question.

10. Tendon, bone, and fat are examples of:

(A) Epithelial tissue
(B) Connective tissue
(C) Muscular tissue
(D) Nervous tissue

Correct Answer: B

Explanation: Tendon, bone, and fat are examples of connective tissue.

11. Which tissue is specialized for movement?

(A) Epithelial
(B) Connective
(C) Muscular
(D) Nervous

Correct Answer: C

Explanation: Muscular tissue is specialized for contraction and relaxation, enabling movement.

12. Nervous tissue is found in:

(A) Tendons
(B) Skin surface
(C) Fat
(D) Brain, spinal cord, and nerves

Correct Answer: D

Explanation: Nervous tissue is found in the brain, spinal cord, and nerves.

13. Which of the following is a vegetative part of the shoot system?

(A) Leaves
(B) Flowers
(C) Fruits
(D) Seeds

Correct Answer: A

Explanation: Leaves — this correctly answers the question.

14. The root system is usually:

(A) Above ground
(B) Underground
(C) On the surface
(D) Inside the leaf

Correct Answer: B

Explanation: The root system is usually underground.

15. Which of the following is a function of the root system?

(A) Photosynthesis
(B) Producing flowers
(C) Anchoring the plant
(D) Absorbing light

Correct Answer: C

Explanation: The root system anchors the plant into the ground, absorbs water and minerals, and serves as a storage site for food.

16. At which level of organization do organs first appear?

(A) Cellular level
(B) Tissue level
(C) Organ system level
(D) Organ level

Correct Answer: D

Explanation: Organs are structures made up of two or more tissues, so the organ level comes after the tissue level.

17. Which of the following organs pumps blood?

(A) Heart
(B) Lungs
(C) Stomach
(D) Kidneys

Correct Answer: A

Explanation: Heart — this correctly answers the question.

18. Which organ system includes the nose, mouth, pharynx, larynx, trachea, and lungs?

(A) Cardiovascular system
(B) Respiratory system
(C) Digestive system
(D) Nervous system

Correct Answer: B

Explanation: Respiratory system — this correctly answers the question.

19. The respiratory system and the circulatory system work together to:

(A) Digest food
(B) Produce hormones
(C) Deliver oxygen to cells and remove carbon dioxide
(D) Filter waste

Correct Answer: C

Explanation: The respiratory system and the circulatory system work together to Deliver oxygen to cells and remove carbon dioxide.

20. The temperature-regulatory control centre in the brain is the:

(A) Cerebrum
(B) Cerebellum

(C) Medulla
(D) Hypothalamus

Correct Answer: D

Explanation: The hypothalamus is the temperature regulation centre in the brain.

21. When body temperature rises, which of the following is an effector activated to cool the body?

(A) Sweat glands
(B) Muscles
(C) Kidneys
(D) Liver

Correct Answer: A

Explanation: Sweat glands are effectors activated to cool the body.

22. Which organ system maintains tissue fluid homeostasis?

(A) Cardiovascular
(B) Lymphatic
(C) Digestive
(D) Endocrine

Correct Answer: B

Explanation: Lymphatic — this correctly answers the question.

23. Which organ system helps in temperature regulation by heat production?

(A) Cardiovascular
(B) Digestive
(C) Muscular
(D) Integumentary

Correct Answer: C

Explanation: Muscular — this correctly answers the question.

24. Which of the following is NOT a function of the leaf?

(A) Photosynthesis
(B) Transpiration
(C) Transferring synthesized food
(D) Anchoring the plant

Correct Answer: D

Explanation: Anchoring the plant is a function of the root system, not the leaf.

25. The epidermis of a leaf is covered by a waxy substance called:

(A) Cutin
(B) Chitin
(C) Cellulose
(D) Lignin

Correct Answer: A

Explanation: A waxy substance called cutin, which forms the cuticle, covers the upper epidermis.

B. Less Important / Secondary Topics

26. Stomata are enclosed by:

(A) Guard cells
(B) Xylem cells
(C) Phloem cells
(D) Mesophyll cells

Correct Answer: A

Explanation: Each stoma is enclosed by two guard cells.

27. The palisade mesophyll consists of:

(A) Loosely arranged irregular cells
(B) Two or three layers of cylindrical cells with many chloroplasts
(C) Dead cells
(D) Cells without chloroplasts

Correct Answer: B

Explanation: The palisade mesophyll consists of two or three layers of cylindrical cells with many chloroplasts.

28. Which tissue transports water from the roots to the leaves?

(A) Phloem
(B) Dermal tissue
(C) Xylem
(D) Ground tissue

Correct Answer: C

Explanation: Xylem transports water and minerals from the roots to the leaves.

29. Which of the following is a reproductive part of the shoot system?

(A) Leaves
(B) Stems
(C) Roots
(D) Flowers

Correct Answer: D

Explanation: Flowers — this correctly answers the question.

30. Most organs contain how many tissue types?

(A) Four
(B) One
(C) Two
(D) Three

Correct Answer: A

Explanation: Four — this correctly answers the question.

31. Which of the following is an example of an organ?

(A) Muscle tissue
(B) Heart
(C) Neuron
(D) Ribosome

Correct Answer: B

Explanation: Heart — this correctly answers the question.

32. Which organ provides a barrier to protect internal structures from the external environment?

(A) Heart
(B) Lungs
(C) Skin
(D) Stomach

Correct Answer: C

Explanation: The skin provides a barrier to protect internal structures from the external environment.

33. Which of the following is a function of the lungs?

(A) Pumping blood
(B) Digesting food
(C) Filtering waste
(D) Bringing in oxygen and eliminating carbon dioxide

Correct Answer: D

Explanation: Bringing in oxygen and eliminating carbon dioxide — this correctly answers the question.

34. Which of the following correctly describes the relationship between structure and function at the organ level?

(A) Structure is closely related to function
(B) Structure is unrelated to function
(C) Only cells have structure-function relationships
(D) Only organ systems have structure-function relationships

Correct Answer: A

Explanation: At each level of organization, structure is closely related to function.

35. Which plant organ system is generally above ground?

(A) Root system
(B) Shoot system
(C) Vascular system
(D) Dermal system

Correct Answer: B

Explanation: The shoot system generally grows above ground, where it absorbs the light needed for photosynthesis.

36. A scientist discovers a new multicellular organism. It has cells with nuclei, no cell walls, and the ability to move. To which kingdom does it most likely belong?

(A) Plantae
(B) Fungi
(C) Animalia
(D) Protista

Correct Answer: C

Explanation: Animalia — this correctly answers the question.

37. Which of the following best explains why the respiratory and circulatory systems must work together?

(A) They both produce hormones
(B) They both digest food
(C) They both filter waste
(D) Neither system alone can exchange gases between cells and the environment

Correct Answer: D

Explanation: Only when both systems are working together can oxygen and carbon dioxide be successfully exchanged between cells and the environment.

38. A person is exercising vigorously. Which homeostatic response is most likely to occur?

(A) Increased sweating and increased blood flow to the skin
(B) Decreased blood flow to the skin
(C) Decreased breathing rate
(D) Decreased body temperature

Correct Answer: A

Explanation: Increased sweating and increased blood flow to the skin — this correctly answers the question.

39. Which of the following correctly matches an organ system with its role in homeostasis?

(A) Cardiovascular — maintains tissue fluid homeostasis
(B) Digestive — maintains blood nutrient levels
(C) Lymphatic — stabilizes gases, wastes, temperature, and pH
(D) Endocrine — provides protection from injury

Correct Answer: B

Explanation: Digestive — maintains blood nutrient levels — this correctly answers the question.

40. Which of the following is an example of a tissue?

(A) Heart
(B) Human

(C) Muscle tissue
(D) Stomach

Correct Answer: C

Explanation: Muscle tissue is an example of a tissue (a group of cells with similar functions).

41. A student examines a leaf under the microscope. Which of the following structures would be present for gas exchange?

(A) Xylem
(B) Phloem
(C) Cuticle
(D) Stomata

Correct Answer: D

Explanation: Stomata are tiny pores on the lower epidermis that allow the exchange of oxygen and carbon dioxide with the environment.

42. Which of the following best explains why plant cells can become turgid while animal cells cannot?

(A) Plant cells have a rigid cell wall; animal cells lack a cell wall
(B) Plant cells have a nucleus; animal cells do not
(C) Plant cells have chloroplasts; animal cells do not
(D) Plant cells have mitochondria; animal cells do not

Correct Answer: A

Explanation: Plant cells can become turgid due to the presence of a cell wall, which allows plant parts to maintain structure and stay upright. Animal cells lack a cell wall and cannot become turgid.

43. Which of the following statements about the shoot system is correct?

(A) It is generally underground
(B) It includes leaves, stems, flowers, and fruits
(C) It consists only of reproductive parts
(D) It anchors the plant

Correct Answer: B

Explanation: It includes leaves, stems, flowers, and fruits — this correctly answers the question.

44. Which of the following correctly describes the role of guard cells?

(A) They transport water
(B) They perform photosynthesis
(C) They regulate the opening and closing of stomata
(D) They store food

Correct Answer: C

Explanation: They regulate the opening and closing of stomata — this correctly answers the question.

45. A scientist is studying a tissue that covers and lines body surfaces and organs. Which tissue type is this?

(A) Connective tissue
(B) Muscular tissue
(C) Nervous tissue
(D) Epithelial tissue

Correct Answer: D

Explanation: Epithelial tissue — this correctly answers the question.

46. Which of the following best explains why most organs contain all four tissue types?

(A) To perform complex functions requiring different cell activities
(B) To increase their size
(C) To reduce their weight
(D) To prevent disease

Correct Answer: A

Explanation: Most organs contain all four tissue types, which work together to perform specific functions.

47. Which of the following is a function of the endocrine system?

(A) Transport of oxygen
(B) Maintaining balance of many blood components like glucose, water, and calcium
(C) Providing physical defence against infection
(D) Producing movement

Correct Answer: B

Explanation: Maintaining balance of many blood components like glucose, water, and calcium — this correctly answers the question.

48. Which of the following statements about the levels of organization is correct?

(A) Tissues are made of organs
(B) Organs are made of organ systems
(C) Organ systems are made of organs
(D) Cells are made of tissues

Correct Answer: C

Explanation: Organ systems are groups of organs that perform related functions.

49. Which of the following is a function of the integumentary system?

(A) Transport of nutrients
(B) Production of hormones
(C) Digestion of food
(D) Protection from injury and fluid loss

Correct Answer: D

Explanation: The integumentary system provides protection from injury and fluid loss and provides physical defence against infection by microorganisms.

50. Which of the following best describes the relationship between the respiratory and circulatory systems?

(A) They work together to exchange gases between cells and the environment
(B) They work independently
(C) They compete for resources
(D) They have no interaction

Correct Answer: A

Explanation: The respiratory and circulatory systems work closely together to deliver oxygen to cells and remove carbon dioxide. Only when both systems are working together can gas exchange occur successfully. Answer.