

INDIAN SCHOOL AL WADI AL KABIR		
CLASS: IX	DEPARTMENT OF SCIENCE (2021 – 2022) SUBJECT : BIOLOGY	DATE OF COMPLETION: 10/06/2021
WORKSHEET NO:2 WITH ANSWERS	TOPIC: TISSUES	A4 FILE FORMAT (PORTFOLIO)
CLASS & SEC:	NAME OF THE STUDENT:	ROLL NO.

I. OBJECTIVE TYPE QUESTIONS

Ia. Fill in the blanks: -

1. Lining of blood vessels is made up of _____.
2. Lining of small intestine is made up of _____.
3. Lining of kidney tubules is made up of _____
4. Epithelial cells with cilia are found in _____ of our body
5. Cells of cork contain a chemical called _____
6. Cambium is an example for__.
7. _____ is an example for a dead simple permanent tissue.
8. The vascular tissue that conducts food in plants is__.
9. _____ is a striated and involuntary muscle.
10. The matrix is fluid in connective tissue _____

Ib. Multiple choice Questions: -

11. A nail is inserted in the trunk of a tree at a height of 1 metre from the ground level. After 3 years the nail will
 - a) move downwards
 - b) move upwards
 - c) remain at the same position
 - d) move sideways
12. The muscular tissue which functions throughout the life continuously without fatigue is
 - a) skeletal muscle
 - b) cardiac muscle
 - c) smooth muscle

- d) voluntary muscle
13. Voluntary muscles are found in
- a) alimentary canal
 - b) limbs
 - c) iris of the eye
 - d) bronchi of lungs
14. Which is not a function of epidermis?
- a) Protection from adverse condition
 - b) Gaseous exchange
 - c) Conduction of water
 - d) Transpiration
15. The girth of stem increases due to
- a) apical meristem
 - b) lateral meristem
 - c) intercalary meristem
 - d) vertical meristem
16. Intestine absorbs the digested food materials. What type of epithelial cells are responsible for that?
- a) Stratified squamous epithelium
 - b) Columnar epithelium
 - c) Spindle fibres
 - d) Cuboidal epithelium
17. While doing work and running, you move your organs like hands, legs etc. Which among the following is correct?
- a) Smooth muscles contract and pull the ligament to move the bones
 - b) Smooth muscles contract and pull the tendons to move the bones
 - c) Skeletal muscles contract and pull the ligament to move the bones
 - d) Skeletal muscles contract and pull the tendon to move the bones

Ic. Match the following:

18. Match the statements in column A with those in column B:

Column A	Column B
1. Apical meristem	a) Base of leaf stalk
2. Intercalary meristem	b) Lateral conduction
3. Sieve tube	c) Root tips
4. Xylem Parenchyma	d) Uneven thickening
5. Collenchyma	e) Companion cell
6. Fluid connective tissue	f) Areolar tissue
7. Filling of space inside the organs	g) Cartilage
8. Striated muscle	h) Blood
9. Surface of joints	i) Skeletal muscle

II. Assertion and reasoning:

- A) If both, Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B) If both, Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
- C) If Assertion is true but the Reason is false.
- D) If both, Assertion and Reason are false.

19. Assertion: Aquatic plants are with parenchyma cells having large air cavities

Reason: They help in the transport of nutrients.

20. Assertion: Bone is a connective tissue which is very hard and rigid.

Reason: The matrix consists of calcium and phosphate

21. Assertion: The cells of connective tissues except blood secrete fibres.

Reason: Fibres provide strength, elasticity and flexibility to the tissue.

III. PASSAGE BASED QUESTIONS

Read the passage and answer the questions:

Most of the plants on our planet Earth are vascular plants. These plants have a well organised system for transporting materials to the different plant parts. As human body has

organs, similarly vascular plants also have different organs. These organs are leaves, stems and roots. The leaves help the plant in the production of food through the process of photosynthesis with the help of solar energy. The roots provide anchorage to the plant in the soil. These roots also absorb nutrients and water from the soil. The stem conducts water and supports the plant.

Two kinds of vascular tissues are found inside the plant body – xylem and phloem. Xylem carries water and nutrients. Water always flows in the upward direction. Phloem picks up the food (sugar) and directs it upwards and downwards.

Vascular tissue is mostly found in clusters with xylem and phloem ‘packaged’ together. The process of water flow starts with the root pressure which draws the water inward. Water molecules cling to each other through cohesive forces and move. Transpiration is the process which ultimately keeps the water moving. As the water gets evaporated from the leaves, it pulls more water and the process continues.

22. The vascular system in plants is functionally similar to _____ in animals
- a) Excretory system
 - b) Digestive system
 - c) Circulatory system
 - d) Respiratory system
23. Water is conducted
- a) In upward direction only through xylem
 - b) In upward direction only through phloem
 - c) Downward direction only through xylem
 - d) Both upward and downward directions through xylem and phloem both
24. Water is conducted from roots to the various parts of plant through
- a) Transpirational pull
 - b) Transpirational pull and cohesive forces
 - c) Transpirational pull, root pressure and cohesive forces
 - d) Root pressure and cohesive forces
25. Which ‘structure’ in the plant helps water conduction through transpiration?
- a) Cuticle
 - b) Bark

- c) Stomata
- d) Epidermis

IV. VERY SHORT ANSWER TYPE QUESTIONS CARRYING 1 MARK EACH

- 26. Define the process of differentiation
- 27. Why is epidermis important for the plant?
- 28. State one function of parenchyma.
- 29. Where is apical meristem found?
- 30. Name the tissue present in brain.
- 31. Give any two characteristic features of meristem.
- 32. What is the function of phloem?
- 33. Mention any two functions of epithelial tissue.
- 34. Mention the characteristic features of connective tissues

V. SHORT ANSWER TYPE QUESTIONS CARRYING 3 MARKS EACH

- 35. Give any three differences between bone and cartilage
- 36. How is tendon different from ligament?
- 37. How does cardiac muscle differ from both voluntary muscle and smooth muscle in its structure and its function?
- 38. Tabulate the differences between three types of muscles.
- 39. Give a brief account of epithelial tissue.
- 40. (a) Name the different components present in phloem
(b) Draw and label the components of phloem
- 41. (a) What type of tissue is found at the shoot apex?
(b) Give the special features of the tissue
- 42. Differentiate between parenchyma, collenchyma and sclerenchyma on the basis of cell wall.
- 43. Animals of colder regions and fishes of cold water have thicker layer of subcutaneous fat. Describe why?
- 44. If a potted plant is covered with a glass jar, water vapors appear on the wall of glass jar. Explain.
- 45. Water hyacinth floats on water surface. Explain.

46. Give reasons

- i) We get a crunchy and granular feeling, when we chew guava fruit.
- ii) Branches of a tree move and bend freely in high wind velocity

47. Cells of epidermal tissue form a continuous layer without intercellular space. Why?

VI. LONG ANSWER TYPE QUESTIONS CARRYING 5 MARKS EACH

48. i) Name the outermost layer present in plants

- ii) Give the characteristic features of this layer.
- iii) What are the different roles played by this layer?

49. (a) Differentiate between xylem and phloem on the basis of the following features:

- (i) Nature of cell elements (ii) Function
- (b) Draw a neat labelled diagram of xylem elements

50. (i) Distinguish between bone and cartilage.

- (ii) What is the importance of ligament?
- (iii) Why is connective tissue known so?

VII. Board based questions

51. Multicellular organisms show division of labour. Explain with the help of an example.

52. What are the different elements present in xylem? Give the functions performed by each one.

53. Schematically represent different types of connective tissue and write the special feature of each one.

54. Explain the following terms:

- a) Cuticle
- b) Cork
- c) Tendons

55. Draw a labelled diagram of neuron

56. Give any three features of cardiac muscles

57. What are the functions of bones, cartilages and tendons?

ANSWER KEY AND HINTS

1	Squamous epithelium	1
2	Columnar epithelium	1
3	Cuboidal epithelium	1
4	Respiratory tract	1
5	Suberin	1
6	Lateral meristem	1
7	Sclerenchyma	1
8	Phloem	1
9	Cardiac muscle	1
10	Blood	1
11	c) remain at the same position	1
12	b) Cardiac muscle	1
13	b) Limbs	1
14	c) Conduction of water	1
15	b) Lateral meristem	1
16	b) Columnar epithelium	1
17	d) Skeletal muscles contract and pull the tendon to move the bones	1
18	1 – c, 2 - a, 3 - e, 4 - b, 5 – d, 6 – h, 7 – f, 8 – i, 9 – g	1
19	C	1
20	A	1
21	B	1
22	c) Circulatory system	1
23	a) In upward direction only through xylem	1
24	c) transpirational pull, root pressure and cohesive forces	1
25	c) Stomata	1
26	The loss of ability to divide by taking up a permanent shape, size and function is called differentiation. Cells develop into tissues and organs with the help of differentiation.	1
27	Covers the outermost part of the plant and protect from harmful bacteria for plants by resists its entry.	1

28	photosynthesis, food storage, sap secretion, and gas exchange.	1
29	Roots and shoot tips	1
30	Nervous tissue	1
31	Small cells, dense protoplasm, actively dividing	1
32	Transport of food	1
33	Protection, secretion, absorption, excretion, filtration, diffusion, and sensory reception.	1
34	binding and supporting, protecting, insulating, storing reserve fuel, transporting substances within the body.	1
35	The main difference between bone and cartilage are listed below. Bones are the hard, inelastic and a tough organ that forms part of the vertebral skeleton. Cartilage is a soft, elastic and flexible connective tissue that protects the bone from rubbing against each other.	3
36	Tendons are cord-like structures that transmit muscular force to a bone. On the contrary, ligaments are the structures that connect a bone to a bone.	3
37	Cardiac muscle is under involuntary control. It contracts rhythmically under control from the autonomic nervous system and is not under conscious control. Smooth muscle is under involuntary control and non-striated (unlike skeletal muscle). It's function is mainly in the gut and internal organs	3
38	Features of skeletal, smooth and cardiac muscles – voluntary/involuntary, striated/non-striated, shape	3
39	General features – closely packed cells, no intercellular space, very little cementing material, extra cellular basement material etc.	3
40	Sieve tube, companion cell, parenchyma, fibreDiagram	3
41	a) Apical meristem b) Small actively dividing cells, no vacuoles, dense protoplasm	3
42	Parenchyma- thin and cellulosic, collenchyma – corners thick and made up of pectin, sclerenchyma – thick and made up of lignin	3
43	Fat deposit acts as insulator and thus prevents the loss of heat from body	3
44	Due to transpiration, loss of water in the form of water vapour through stomata	3

45	Presence of aerenchyma, explanation of aerenchyma and mention the functions	3
46	(i) Due to the presence of sclerenchyma cells in the pulp (ii) Collenchyma is present, provides flexibility and easy bending	3
47	Single layered and compactly arranged to perform their functions, mention the functions	3
48	(a) Epidermis (b) Features – single layered, compactly arranged, no intercellular space, outer and lateral walls are thick (c) Functions – any four	5
49	a) Elements of xylem and phloem, functions b) Diagram	5
50	(i) Bone – hard matrix, matrix is with calcium and phosphorus; Cartilage – flexible, matrix is with sugar and proteins (ii) Connect two bones (iii) It connects or links different parts or systems	5
51	Mention the function of different systems	5
52	Tracheids and vessels – transport of water and minerals, parenchyma- storage and lateral conduction, fibres – mechanical support	3
53	Special feature of Blood, bone, cartilage, adipose and areolar	5
54	Cuticle – outermost waxy coating, prevents water loss Cork – Replaces epidermis, impervious Tendons – Connect muscles to bones	3
55	Diagram	3
56	Cardiac – striated, involuntary, branched, cylindrical	3
57	Bone – structural frame work and movement Cartilage – Provides flexibility and helps in movement Tendons – Connect muscle to bones	3

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