Shiksha Classes, Bhandara
Biology
Structural organization in animals

(1.) Consider the following statements:

(A) A tissue is composed of similar cells which perform specific functions.

(B) Epithelial tissues are characterized by a free surface toward body fluid or outside environment. Select the correct option

(a.) A is true, B is false

(b.) Both A and B are false

(c.) A is false, B is true

(d.) Both A and B are false

(2.) Simple epithelium consists of

(a.) large intercellular spaces

(b.) single layer of cells

(c.) flat cells without nucleus

(d.) all of these

(3.) Human skin is composed of

(a.) compound epithelium

(b.) squamous epithelium

(c.) columnar epithelium

(d.) ciliated epithelium

(4.) Match the following columns.

Column-I	Column-II
(a.) Squamous epithelium	(1) Stomach and intestine
(b.) Cuboidal epithelium	(2) Lungs and blood vessels
(c.) Columnar epithelium	(3) Tubular parts of nephrons

Select the correct option

(a.)
A	B	C
3	1	2

(b.)
A	B	C
1	2	3

(c.)
A	B	C
2	3	1

(d.)
A	B	C
3	2	1

(5.) The inner walls of large blood vessels are formed by

(a.) pseudostratified epithelium

(b.) squamous epithelium

(c.) ciliated epithelium

(d.) columnar epithelium

(6.) What is the similarity between cuboidal epithelium and columnar epithelium?

(a.) They are composed of two layers of cells.

(b.) They are composed of phagocytic cells.

(c.) They perform the functions of secretion and absorption.

(d.) All of these

(7.) Identify the tissues A and B shown in the following diagram:

(A)   (B)

Select the correct option A B

(a.) Squamous epithelium Columnar epithelium

(b.) Cuboidal epithelium Squamous epithelium

(c.) Columnar epithelium Cuboidal epithelium

(d.) Compound epithelium Pseudostratified

(8.) Efficient gaseous exchange in the air sacs of the lungs occur due to the presence of

(a.) numerous microvilli

(b.) ciliated epithelium

(c.) flat cells

(d.) columnar epithelium

(9.) The inner surface of hollow organs are lined by

(a.) columnar epithelium

(b.) compound epithelium

(c.) squamous epithelium

(d.) ciliated epithelium

(10.) The ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in

(a.) fallopian tubes and pancreatic duct

(b.) eustachian tube and salivary duct

(c.) bronchioles and fallopian tubes

(d.) bile duct and bronchioles

(11.) Match the following columns.

Column-I	Column-II
(A) Goblet cells	(1) Multicellular glandular epithelium
(B) Salivary glands	(2) Unicellular glandular epithelium
(C) Buccal cavity	(3) Compound epithelium
(D) PCT	(4) Cuboidal epithelium

Select the most appropriate option.

(a.)
A	B	C	D
2	1	3	4

(b.)
A	B	C	D
3	2	4	1

(c.)
A	B	C	D
4	3	1	2

(d.)
A	B	C	D
1	4	2	3

(12.) All the listed glands pour their secretions into ducts except

(a.) salivary gland

(b.) digestive glands

(c.) pineal gland

(d.) mammary glands

(13.) Select the incorrect statement.

(a.) Multicellular glandular epithelium is formed of clusters of cells.

(b.) Compound epithelium is actively involved in secretion and absorption of substances.

(c.) Pancreatic and salivary ducts are internally lined by compound of epithelium.

(d.) None of these

(14.) Cell junctions
1. Are formed in epithelial tissues
2. Provide structural and functional link between adjacent cells of tissues
3. Are alternatively called gap junctions Select the most appropriate option.

(a.) 1, 2, 3 are correct

(b.) Only 1 is correct

(c.) 2 and 3 are correct

(d.) 1 and 2 are correct

(15.) Match the following cell structure with its characteristic feature: [

Column-I	Column-II
(A) Tight junctions	(1) Cement neighbouring cells together to form sheet
(B) Adhering junctions	(2) Transmit information through chemical to another cells
(C) Gap junctions	(3) Establish a barrier to prevent leakage of fluid across epithelial cells
(D) Synaptic junctions	(4) Cytoplasmic channels to facilitate communications between adjacent cells

Select the most appropriate option.

(a.)
A	B	C	D
4	3	1	2

(b.)
A	B	C	D
2	4	1	3

(c.)
A	B	C	D
4	2	1	3

(d.)
A	B	C	D
3	1	4	2

(16.) The function of the gap junction is to

(a.) stop substance from leaking across a tissue.

(b.) perform cementing to keep neighbouring cells together.

(c.) facilitate communication between adjoining cells by connecting the cytoplasm for rapid transfer of ions, small molecules and some large molecules.

(d.) separate two cells from each other.

(17.) **Assertion:** Squamous epithelium helps in the diffusion of gases in lungs.
Reason: Squamous epithelium bears microvilli.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(18.) **Assertion:** Compound epithelium is composed of two or more layers of cells.
Reason: Compound epithelium has protective functions.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(19.) Select the incorrect statement regarding connective tissues:

(a.) It helps to connect and support other tissues of the body.

(b.) Blood is a fluid connective tissue.

(c.) It is composed of structural protein fibres, viz, collagen or elastin.

(d.) Their ground substance is composed of polypeptides and its derivatives.

(20.) Areolar tissue is a type of

(a.) loose connective tissue

(b.) compound epithelium

(c.) dense connective tissue

(d.) specialized connective tissue

(21.) Areolar tissues contain

(a.) T lymphocytes tissue and B lymphocytes

(b.) fibroblast, macrophages, mast cells

(c.) fibroblast cells only

(d.) fibroblasts and fat globules

(22.) Fat-storing adipose tissue is

(a.) loose connective tissue

(b.) dense regular connective tissue

(c.) dense irregular connective tissue

(d.) specialized connective tissue

(23.) Consider the following statements:
(A) In dense connective tissues, fibroblasts are compactly packed.
(B) In dense regular connective tissues, collagen fibres are arranged in parallel rows.
Select the correct option

(a.) A is true, B is false

(b.) A is false, B is true

(c.) Both A and B are false

(d.) Both A and B are true

(24.) The cross-sectional view of tendons under the microscope would appear as

(a.)

(b.)

(c.)

(d.)
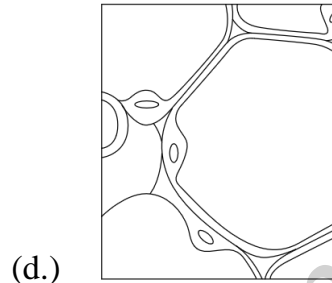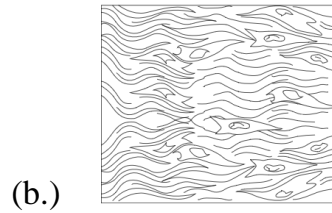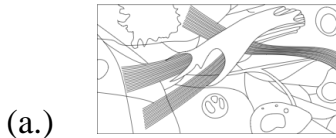
(25.) Ligaments contain

(a.) loose bundles of fibres

(b.) large fat storage areas

(c.) parallely arranged collagen fibres

(d.) irregularly placed elastin fibres

(26.) Match the following columns:

Column-I

(A) Skin

(B) Tendon

(C) Adipose tissue

(D) Cartilage

Column-II

(1) Loose connective tissue

(2) Specialized connective tissue

(3) Dense regular connective Tissue

(4) Dense irregular connective tissue

Select the correct option

(a.)
A	B	C	D
3	1	2	4

(b.)
A	B	C	D
4	3	1	2

(c.)
A	B	C	D
2	4	3	1

(d.)
A	B	C	D
1	2	4	3

(27.) The intracellular material of cartilage is

(a.) solid and pliable

(b.) solid and non-pliable

(c.) hollow and soft

(d.) hollow and jelly-like

(28.) Bones are hard and non-pliable due to the presence of

(a.) calcium salts

(b.) elastin fibres

(c.) chondrocytes

(d.) all of these

(29.) The spaces in which osteocytes are present are called

(a.) osteoclast

(b.) sinuses

(c.) lacunae

(d.) canaliculi

(30.) The fluid connective tissue contains all of the following cells, except

(a.) platelets

(b.) fibroblasts

(c.) WBCs

(d.) RBCs

(31.) Match the following columns:

Column-I

(a.) Adipose tissue

(b.) Hyaline cartilage

(c.) Fluid connective tissue

(d.) Areolar tissue

Column-II

(1) Blood

(2) Macrophages and mast cells

(3) Fat storage

(4) Nose

Select the correct option

(a.)
A	B	C	D
4	3	2	1

(b.)
A	B	C	D
2	4	1	3

(c.)
A	B	C	D
1	2	3	4

(d.)
A	B	C	D
3	4	1	2

(32.) **Assertion:** Dense irregular connective tissue is the most abundant tissue in human body.
Reason: Human skin contains collagen fibres that are oriented differently.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(33.) **Assertion:** Weight bearing functions are performed by cartilage.
Reason: Chondrocytes are found in hard, nonpliable ground substance.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(34.) Myofibrils are

(a.) contracted muscle fibres

(b.) structural components of all muscle fibres

(c.) striated muscle fibres

(d.) skeletal muscle fibres

(35.) Skeletal muscles are

(a.) striated in appearance

(b.) smooth in appearance

(c.) involuntary muscles

(d.) both (a) and (c)

(36.) The muscle bundles in biceps region would appear as

(a.)

(b.)

(c.)
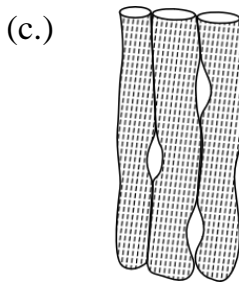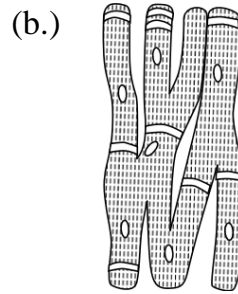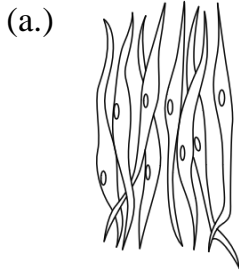
(d.) Either (b) or (c)

(37.) Involuntary muscle fibres in human body are found in

(a.) heart

(b.) blood vessels

(c.) intestine

(d.) all of these

(38.) Consider the following statements:
(A) All involuntary muscles are smooth in appearance.
(B) All striated muscles are voluntary muscles. Select the correct option

(a.) A is true, B is false

(b.) Both A and B are true

(c.) A is False, B is true

(d.) Both A and B are false

(39.) Which type of tissue correctly matches with its locations? Tissue Location

(a.) Areolar tissue Tendons

(b.) Transitional epithelium Tip of nose

(c.) Cuboidal epithelium Lining of stomach

(d.) Smooth muscle Wall of intestine

(40.) The muscular layer lining the stomach and intestine is

(a.) striated in appearance

(b.) smooth in appearance

(c.) multinucleated

(d.) characterized by intercalated discs

(41.) Heart cells have the ability to contract as a unit to the presence of

(a.) multinucleate condition

(b.) fusiform shape

(c.) intercalated discs

(d.) striations Neural Tissue

(42.) The structural and functional unit of nervous system is

(a.) neuron

(b.) neuroglia

(c.) oligodendrocyte

(d.) ganglia

(43.) The neurons in the neural system are protected by

(a.) dendrites

(b.) neuroglial cells

(c.) axons

(d.) Nissl's granules

(44.) **Assertion:** Both skeletal muscles and cardiac muscles are striated appearance.
Reason: Cardiac muscles are involuntary in nature.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(45.) **Assertion:** Neurons are excitable cells.
Reason: Neurons are found abundantly throughout the body.

(a.) Both assertion and reason are true, assertion is incorrect explanation of assertion

(b.) Both assertion and reason are true, reason is not the correct explanation of assertion

(c.) Assertion is true, reason is false

(d.) Both assertion and reason are false

(46.) Earthworm is

(a.) terrestrial vertebrate

(b.) aquatic invertebrate

(c.) aquatic vertebrate

(d.) terrestrial invertebrate

(47.) Which among the following option represents the common Indian earthworm genus?

(a.) Pheretima and Lumbricus

(b.) Perionyx and Eudrilus

(c.) Eisenia and Metaphire

(d.) Pheretima and Amynthas Morphology

(48.) How many metameres are commonly found in the body of an earthworm?

(a.) 2–10

(b.) 20–30

(c.) 100–200

(d.) 2000–3000

(49.) How the dorsal body surface of an earthworm can be distinguished from its ventral surface?

(a.) Ventral surface has a median dark line.

(b.) Dorsal surface has two genital pores.

(c.) Dorsal surface has a median dark line.

(d.) Ventral surface has a dark line and two genital pores.

(50.) The prostomium of earthworm
(1) Represent first body segment
(2) Covers the mouth and help in burrowing
(3) Is sensory in function Select the most appropriate option.

(a.) 1, 2, 3 are correct

(b.) 2, 3 are correct

(c.) 1 and 3 are correct

(d.) 1 and 2 are correct

ANSWER

(1.)	d	**(2.)**	b	**(3.)**	a	**(4.)**	c	**(5.)**	b
(6.)	c	**(7.)**	a	**(8.)**	c	**(9.)**	d	**(10.)**	c
(11.)	a	**(12.)**	c	**(13.)**	b	**(14.)**	d	**(15.)**	d
(16.)	c	**(17.)**	c	**(18.)**	a	**(19.)**	d	**(20.)**	a
(21.)	b	**(22.)**	a	**(23.)**	d	**(24.)**	b	**(25.)**	c
(26.)	b	**(27.)**	a	**(28.)**	a	**(29.)**	c	**(30.)**	b
(31.)	d	**(32.)**	a	**(33.)**	d	**(34.)**	b	**(35.)**	a
(36.)	c	**(37.)**	d	**(38.)**	d	**(39.)**	d	**(40.)**	b
(41.)	c	**(42.)**	a	**(43.)**	b	**(44.)**	b	**(45.)**	c
(46.)	d	**(47.)**	a	**(48.)**	c	**(49.)**	c	**(50.)**	b

EXPLANATION

(1.) (d) Tissues are formed by the grouping of similar cells so as to perform specific functions. These tissues are then organized to form specific organs. Epithelial tissue is one of the four major types of tissues. It has a free surface which either face body fluids or outside environment.

(2.) (b) Simple epithelium consists of single layer of cells in contrast to the compound epithelium which is formed by two or more layers of cells.

(3.) (a) Compound epithelium is composed of two or more layer of cells and it is protective in function. Thus, it is found in human skin.

(4.) (c) A-2, B-3, C-1

(5.) (b) The inner walls of blood vessels are lined by thin squamous epithelium. It helps in easy discharge of gases, waste material, etc. between blood and other body organs.

(6.) (c) Both columnar and ciliated epithelium are simple epithelial tissues. They help in secretion and absorption in different regions of body.

(7.) (a) A – Squamous epithelium; B – Columnar epithelium.

(8.) (c) Air sacs of lungs are lined by squamous epithelium which is composed of single layer of flat cells. These cells allow efficient gaseous exchange.

(9.) (d) Ciliated epithelium bear cilia on their free surface and they line the hollow orglike fallopian tube and bronchioles. It helps to move the particles or any substance inside the hollow tube.

(10.) (c) Both bronchioles and fallopian tubes are hollow structures in human body these are lined internally by ciliated epithelium so that the cilia can move mucus and egg in particular specified direction within them.

(11.) (a) A-2, B-1,C-3, D-4

(12.) (c) Pineal gland is an endocrine gland which pours its secretion into blood stream while the rest three are exocrine glands.

(13.) (b) Compound epithelium has a very limited or no role in secretion and absorption of substances. It major role is concerned with protection of structures.

(14.) (d) Cell junctions provide structural and functional links between the cells of epithelial tissues – the gap junctions are one of the type of cell junctions found in epithelium.

(15.) (d) A-3, B-1, C-4, D-2.

(16.) (c) Gap junctions are the cell junctions which connect the cytoplasm of adjacent cells, they allow the transfer of ions, small molecules and some large molecules to adjacent cells.

(17.) (c) Squamous epithelium is composed of single layer of flat cells due to which it allows the diffusion of gases in lungs easily. It does not bear microvilli.

(18.) (a) Compound epithelium has protective functions and therefore they are composed of two or more layers of cells so as to withstand wearing and tearing, e.g., skin.

(19.) (d) The ground substance of connective tissue is composed of polysaccharides and it is secreted by the cells of connective tissue.

(20.) (a) Areolar connective tissue is a type of loose connective tissue. It is abundantly found beneath the skin.

(21.) (b) Areolar tissue contains fibroblast, macrophages and mast cells. Fibroblasts produce and secrete fibres of collagen or elastin whereas macrophages and mast cells help in the phagocytosis of cellular debris.

(22.) (a) Adipose tissues are specialized to store excess nutrients in the body in the form of fats. These are loose connective tissues.

(23.) (d) The fibroblasts are found compactly packed in dense connective tissues, Based on the arrangement of collagen fibres, these are further divided as dense regular and dense irregular tissues.

(24.) (b) Tendon is composed of dense regular connective tissues in which collagen fibres are arranged in parallel rows. Tendons connect the skeletal muscles to bones.

(25.) (c) Ligaments connect one bone to another. These are dense regular connective tissues which contain parallel arranged fibres of collagen.

(26.) (b) A – 4; B – 4; C – 1; D – 2

(27.) (a) Cartilage is composed of solid and pliable intracellular material. It is soft and flexible as compared to bones.

(28.) (a) Bones contain calcium and phosphate salts, i.e., hydroxyapatite. they make the ground substance of bones hard and non-pliable.

(29.) (c) Lacunae are the spaces in the bones which contain osteocytes. Adjacent lacunae are connected through canaliculi. One lacuna contains only one osteocyte.

(30.) (b) Fibroblast are fibre-forming cells which are not found in blood or the fluid connective tissue.

(31.) (d) A-3, B-4, C-1, D-2

(32.) (a) Human skin contains dense irregular connective tissues which are characterized by differently oriented collagen fibres.

(33.) (d) The ground substance of cartilage is solid and pliable. They cannot perform weight bearing functions. Such functions are performed by bones, e.g., limb bones whose ground substance is hard and non-pliable.

(34.) (b) Myofibril is the basic structural unit of all muscle fibres. These are thin, numerous fibrils which contract and relax so as to carry out movements of the body.

(35.) (a) Skeletal muscles are striated, voluntary muscles.

(36.) (c) Striated muscles are found in the biceps of humans. These are skeletal voluntary muscles.

(37.) (d) Involuntary muscles are either cardiac muscles of heart or smooth muscles of intestine, blood vessels, etc. These muscles are not under the control of human will.

(38.) (d) Cardiac muscles are involuntary muscles which are striated in appearance.

(39.) (d) Smooth muscles are involuntary muscles which line the wall of intestine, stomach, etc., Areolar tissue is a loose connective tissue which is found under the skin. Transitional epithelium is found in uterus and cuboidal epithelium is found in PCT, glandular ducts, etc.

(40.) (b) Stomach and intestine are lined by smooth muscles which are uninucleate, fusiform and do not show striations.

(41.) (c) Intercalated discs are the communication junctions in cardiac muscle tissue. These allow the cardiac cells to contract as a unit. Neural Tissue

(42.) (a) Neurons are the basic structural and functional units of neural system.

(43.) (b) Neuroglial cells protect and support the neurons in neural system. These are not abundant cells in neural system.

(44.) (b) Both skeletal and cardiac muscles are striated but the former are voluntary and the latter are involuntary in nature. The striations appear due to the alternative arrangement of action (light) and myosin (dark) proteins in these muscles.

(45.) (c) Neurons are excitable cells which are found in nervous system, i.e., brain and spinal cord.

(46.) (d) Earthworm is a terrestrial vertebrate which is found in the moist soil.

(47.) (a) Pheretima and Lumbricus are the common Indian earthworms. Morphology

(48.) (c) The body of earthworm is formed of 100–200 short similar segments called metameres.

(49.) (c) The dorsal surface of an earthworm has a characteristic mid-dorsal line which marks the presence of dorsal blood vessel. The ventral surface has genital pore openings.

(50.) (b) The prostomium is the covering of mouth in earthworms. It helps the animal in burrowing and it is also sensory in function. The first body segment is peristomium.