

CHAPTER 2

Structural Organisation in Animals

Epithelial & Connective Tissue

- Which of the following is present between the adjacent bones of the vertebral column? (2022)
 - Smooth muscle
 - Intercalated discs
 - Cartilage
 - Areolar tissue
- Which of the following is not a connective tissue? (2022)
 - Neuroglia
 - Blood
 - Adipose tissue
 - Cartilage
- Match List-I with List-II. (2022)

List-I		List-II	
(A)	Bronchioles	(i)	Dense Regular Connective Tissue
(B)	Goblet cell	(ii)	Loose Connective Tissue
(C)	Tendons	(iii)	Glandular Tissue
(D)	Adipose Tissue	(iv)	Ciliated Epithelium

Choose the correct answer from the options given below.

- A-iii B-iv C-ii D-i
 - A-iv B-iii C-i D-ii
 - A-i B-ii C-iii D-iv
 - A-ii B-i C-iv D-iii
- Identify the types of cell junctions that help to stop the leakage of the substances across a tissue and facilitation of communication with neighbouring cells via rapid transfer of ions and molecules. (2021)
 - Tight junctions and Gap junctions, respectively.
 - Adhering junctions and Tight junctions, respectively.
 - Adhering junctions and Gap junctions, respectively.
 - Gap junctions and Adhering junctions, respectively.
 - Cuboidal epithelium with brush border of microvilli is found in: (2020)
 - Ducts of salivary glands
 - Proximal convoluted tubule of nephron
 - Eustachian tube
 - Lining of intestine

- Goblet cells of alimentary canal are modified from: (2020)
 - Columnar epithelial cells
 - Chondrocytes
 - Compound epithelial cells
 - Squamous epithelial cells
- The ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in (2019)
 - Bile duct and bronchioles
 - Fallopian tubes and pancreatic duct
 - Eustachian tube and salivary duct
 - Bronchioles and fallopian tubes
- The function of the gap junction is to: (2015 Re)
 - Facilitate communication between adjoining cells by connecting the cytoplasm for rapid transfer of ions, small molecules and some large molecules
 - Separate two cells from each other
 - Stop substance from leaking across a tissue
 - Performing cementing to keep neighboring cells together.
- Choose the correctly matched pair: (2014)
 - Cartilage - Loose connective tissue
 - Tendon - Specialised connective tissue
 - Adipose tissue - Dense connective tissue
 - Areolar tissue - Loose connective tissue
- Choose the correctly matched pair: (2014)
 - Inner surface of bronchioles - Squamous epithelium
 - Inner lining of salivary ducts - Ciliated epithelium
 - Moist surface of Buccal cavity - Glandular epithelium
 - Tubular parts of nephrons - Cuboidal epithelium

Muscle Tissue & Neural Tissue

- Which of the following statements wrongly represents the nature of smooth muscle? (2021)
 - They are involuntary muscles
 - Communication among the cells is performed by intercalated discs
 - These muscles are present in the wall of blood vessels
 - These muscle have no striations

12. Select the incorrectly matched pair from following:
(2020-Covid)

- Neurons - Nerve cells
- Fibroblast - Areolar tissue
- Osteocytes - Bone cells
- Chondrocytes - Smooth muscle cells

13. Smooth muscles are: (2016 - II)

- Involuntary, cylindrical, striated
- Voluntary, spindle-shaped, uninucleate
- Involuntary, fusiform, non-striated
- Voluntary, multinucleate, cylindrical

14. Which type of tissue correctly matches with its location?
[OS] (2016 - I)

	Tissue	Location
a.	Smooth muscle	Wall of intestine
b.	Areolar tissue	Tendons
c.	Transitional epithelium	Tip of nose
d.	Cuboidal epithelium	Lining of stomach

15. Which of the following is not a function of the skeletal system?
(2015 Re)

- Storage of minerals
- Production of body heat
- Locomotion
- Production of erythrocytes

Earthworm

16. Following are the statements about prostomium of earthworm.

- It serves as a covering for mouth.
- It helps to open cracks in the soil into which it can crawl.
- It is one of the sensory structures.
- It is the first body segment.

Choose the correct answer from the options given below.
[RC] (2021)

- A, B and D are correct
- A, B, C and D are correct
- B and C are correct
- A, B and C are correct

Cockroach

17. Tegmina in cockroach, arises from [RC] (2022)

- Prothorax and Mesothorax
- Prothorax
- Mesothorax
- Metathorax

18. Which of the following characteristics is incorrect with respect to cockroach? [RC] (2021)

- Hypopharynx lies within the cavity enclosed by the mouth parts.
- In females, 7th - 9th sterna together form a genital pouch.
- 10th abdominal segment in both sexes, bears a pair of anal cerci.
- A ring of gastric caeca is present at the junction of midgut and hind gut.

19. If the head of cockroach is removed, it may live for few days because: [RC] (2020)

- The cockroach does not have nervous system.
- The head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.
- The head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body.
- The supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen.

20. In cockroach, identify the parts of the foregut in correct sequence: [RC] (2020-Covid)

- Mouth → Crop → Pharynx → Oesophagus → Gizzard
- Mouth → Gizzard → Crop → Pharynx → Oesophagus
- Mouth → Pharynx → Oesophagus → Crop → Gizzard
- Mouth → Oesophagus → Pharynx → Crop → Gizzard

21. Match the following columns with reference to cockroach and select the correct option: (2020-Covid)

	Column-I		Column-II
1.	Grinding of the food particles	(i)	Hepatic caecal
2.	Secrete gastric juice	(ii)	10 th segment
3.	10 pairs	(iii)	Proventriculus
4.	Anal cerci	(iv)	Spiracles
		(v)	Alary muscles

(A) (B) (C) (D)

- (iv) (iii) (v) (ii)
- (i) (iv) (iii) (ii)
- (ii) (iii) (i) (iv)
- (iii) (i) (iv) (ii)

22. Select the correct sequence of organs in the alimentary canal of cockroach starting from mouth (2019)

- Pharynx → Oesophagus → Crop → Gizzard → Ileum → Colon → Rectum
- Pharynx → Oesophagus → Gizzard → Crop → Ileum → Colon → Rectum
- Pharynx → Oesophagus → Gizzard → Ileum → Crop → Colon → Rectum
- Pharynx → Oesophagus → Ileum → Crop → Gizzard → Colon → Rectum

23. Which of the following features is used to identify a male cockroach from a female cockroach? [RC] (2018)

- Presence of a boat shaped sternum on the 9th abdominal segment
- Presence of caudal styles
- Forewings with darker tegmina
- Presence of anal cerci

24. In male cockroaches, sperms are stored in which part of the reproductive system? [RC] (2016 - II)

- Testes
- Vas deferens
- Seminal vesicles
- Mushroom glands

25. Which of the following features is not present in *Periplaneta americana*? [RC] (2016 - I)

- Schizocoelom as body cavity
- Indeterminate and radial cleavage during embryonic development
- Exoskeleton composed of N-acetyl glucosamine
- Metamerically segmented body

26. The terga, sterna and pleura of cockroach body are joined by: [RC] (2015)

- Arthrodial membrane
- Cartilage
- Cementing glue
- Muscular tissue

27. The body cells in cockroach discharge their nitrogenous waste in the haemolymph mainly in the form of: [RC] (2015 Re)

- Potassium urate
- Urea
- Calcium carbonate
- Ammonia

28. Select the correct option with respect to cockroaches:

[RC] (2013)

- Malpighian tubules convert nitrogenous wastes into urea
- Males bear short anal styles not present in females
- Nervous system comprises of a dorsal nerve cord and ten pairs of ganglia
- The forewings are tegmina which are used in flight

29. What external changes are visible after the last moult of a cockroach nymph? [RC] (2013)

- Labium develops
- Mandibles become harder
- Anal cerci develop
- Both fore wings and hind wings develop

Frog

30. Select the correct route for the passage of sperms in male frogs: (2017-Delhi)

- Testes → Bidder's canal → Kidney → Vasa efferentia → Urinogenital duct → Cloaca
- Testes → Vasa efferentia → Kidney → Seminal Vesicle → Urinogenital duct → Cloaca
- Testes → Vasa efferentia → Bidder's canal → Ureter → Cloaca
- Testes → Vasa efferentia → Kidney → Bidder's canal → Urinogenital duct → Cloaca

31. Frog's heart when taken out of the body continues to beat for some time (2017-Delhi)

Select the best option from the following statements

- Frog is a poikilotherm
- Frog does not have any coronary circulation
- Heart is "myogenic" in nature
- Heart is autoexcitable

- Only (A)
- Only (D)
- (A) & (B)
- (C) & (D)

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
c	a	b	a	b	a	d	a	d	d	b	d	c	a	b	d	c
18	19	20	21	22	23	24	25	26	27	28	29	30	31			
d	b	c	d	a	b	c	b	a	a	b	d	d	d			