



## RAVI MATHS TUITION CENTRE , WHATSAPP - 8056206308

Time : 60 Mins

### 7 STRUCTURAL ORGANISATION IN ANIMALS 1

Marks : 240

1. **Assertion:** The cells of connective tissues except blood secrete fibres.  
**Reason:** Fibres provide strength, elasticity and flexibility to the tissue.  
a) If both assertion and reason are true and reason is the correct explanation of assertion.  
b) If both assertion and reason are true but reason is not the correct explanation of assertion.  
c) If assertion is true but reason is false.    d) If both assertion and reason are false.
2. In Pheretima, there are red coloured round bodies in 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> segments above the alimentary canal. They are believed to be involved in  
a) respiration    b) digestion    c) reproduction    d) leucocyte production.
3. Each thoracic segment of Periplaneta americana is enclosed by four \_\_\_\_\_ skeletal sclerites : a dorsal \_\_\_\_\_, a ventral \_\_\_\_\_ and two lateral \_\_\_\_\_. The \_\_\_\_\_ of the prothorax is also called pronotum, which covers the neck and a part of the head.  
Complete the above paragraph by selecting the correct sequence of words.  
a) Chitinous, tergum, sternum, pleura, tergum    b) Proteinaceous, sternum, tergum, pleura, tergum  
c) Chitinous, sternum, tergum, pleura, sternum    d) Proteinaceous, tergum, pleuron, sternum, tergum
4. Which of the following structures is correctly matched with its description?  
a) Septal nephridia and pharyngeal nephridia - Both are exonephric  
b) Typhlosole - Helps in grinding the soil particles and decaying leaves.  
c) Sensory system - Possesses light and touch receptors in earthworm  
d) Gizzard - Internal median fold present in the dorsal wall of the intestine of earthworm
5. Stratum germinativum is an example of which kind of epithelium?  
a) Cuboidal    b) Ciliated    c) Columnar    d) Squamous
6. Which of the following statements is/are false about columnar epithelium?  
(i) It is made of tall and slender cells.  
(ii) Free surface may have microvilli.  
(iii) They are found in stomach and intestine and help in secretion and absorption.  
(iv) Ciliated epithelium is mainly present in hollow structures like bronchioles and Fallopian tubes.  
(v) They have apical nuclei.  
a) (i) only    b) (v) only    c) (ii) and (iv)    d) (ii) and (iii)
7. Which of the following is not exclusively supplied with involuntary muscles?  
a) Muscular coats of blood vessels    b) Muscles of the ducts of glands    c) Muscles of iris  
d) Muscles of urethra
8. Which of the following statements about cell junctions are correct?  
(i) All the cells of the epithelium are held together with little intercellular materials.  
(ii) In almost all animal tissues specialised junctions provide both structural and functional link between their individual cells.  
(iii) Tight junctions prevent substances from leaking across a tissue.

- (iv) Adhering junctions provide cementing to keep neighbouring cells together.  
 (v) Gap junctions provide cytoplasmic channels between cells for passage of ions, small molecules and sometimes big molecules.

a) (ii) and (iii)    b) (i), (ii) and (iii)    c) (iv) and (v)    d) (i), (ii), (iii), (iv) and (v)

9. Cloaca is a small, median chamber that is used to pass  
 a) faecal matter    b) urine    c) sperms    d) all of these.
10. Earthworms have no skeleton but during burrowing, the anterior end becomes turgid and acts as a hydraulic skeleton. It is due to \_\_\_\_\_ .  
 a) Coelomic fluid    b) Blood    c) Gut peristalsis    d) Setae

11. Match the following and choose the correct answer.

A. Hermaphrodite	(i)	Produces blood cells and haemoglobin
B. Direct development	(ii)	Testis and ovary in the same animal
C. Chemoreceptor	(iii)	Larval form absent
D. Blood gland in earthworm	(iv)	Sense of chemical substances

a) A-(ii), B-(iii), C-(iv), D-(i)    b) A-(iii), B-(ii), C-(iv), D-(i)    c) A-(i), B-(iii), C-(ii), D-(iv)  
 d) A-(ii), B-(iv), C-(iii), D-(i)

12. Compared to those of humans, the erythrocytes in frog are \_\_\_\_\_ .  
 a) Without nucleus but with haemoglobin    b) Nucleated and with haemoglobin  
 c) Very much smaller and fewer    d) Nucleated and without haemoglobin.
13. In male cockroaches, sperms are stored in which part of the reproductive system?  
 a) Seminal vesicles    b) Mushroom glands    c) Testes    d) Vas deferens
14. Goblet cells of alimentary canal are modified from:  
 a) Chondrocytes    b) Compound epithelial cells    c) Squamous epithelial cells    d) Columnar epithelial cells
15. Read the following statement having two blanks A and B. In cockroach, a ring of 6 - 8 blind tubules called (A) is present at the junction of foregut and midgut while at the junction of midgut and hindgut a ring of 100 - 150 yellow coloured thin filamentous (B) is present.

The one correct option that fills the two blanks is

a)

<b>A</b>	<b>B</b>
Malpighian tubules	hepatic caecae

b)

<b>A</b>	<b>B</b>
fat bodies	vasa efferentia

c)

<b>A</b>	<b>B</b>
hepatic caecae	Malpighian tubules

d)

<b>A</b>	<b>B</b>
vas deferens	fat bodies

16. Nervous tissue is made up of neurons and neuroglial cells. Which of the following statements about these two cells is/are false?  
 (i) Neuroglia make up more than one-half the volume of neural tissue in our body.  
 (ii) Neuroglia protect and support neurons.  
 (iii) When a neuron is suitably stimulated, an electrical disturbance is generated which swiftly travels along its cytosol.  
 (iv) Arrival of the disturbance at the neuron's endings triggers stimulation or inhibition of adjacent neurons or other cells.  
 a) (i) and (iv)    b) (ii) and (iii)    c) (iii) only    d) (iv) only
17. Areolar connective tissue joins \_\_\_\_\_ .  
 a) Integument with muscles    b) Bones with muscles    c) Bones with bones    d) Fat body with muscles
18. Select the correct statement from the ones given below with respect to *Periplaneta americana*.

a)

Nervous system located dorsally, consists of segmentally arranged ganglia joined by a pair of longitudinal connectives.

b) Males bear a pair of short thread like anal styles.

c) There are 16 very long Malpighian tubules present at the junctions of midgut and hindgut.

d) Grinding of food is carried out only by the mouth parts.

19. Frogs differ from humans in possessing:

a) Paired cerebral hemispheres    b) Hepatic portal system    c) Nucleated RBCs    d) Thyroid

20. To which one of the following categories does adipose tissue belong?

a) Epithelial    b) Connective    c) Muscular    d) Neural

21. **Assertion:** Smooth muscles are known as involuntary muscles.

**Reason :** Smooth muscles are controlled by autonomic nervous system.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false.    d) If both assertion and reason are false.

22. **Assertion:** Excretion in cockroach occurs by Malpighian tubules.

**Reason:** Each Malpighian tubule is lined by non-ciliated columnar cells.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false.    d) If both assertion and reason are false.

23. Read the following statements regarding different types of animal tissues and select the incorrect ones.

(i) Each fasciculus (or bundle of muscle fibres) is surrounded by an epithelial tissue covering called perimysium.

(ii) Multi unit smooth muscles are present in ciliary and iris muscles in the eyes and muscles of the walls of large blood vessels.

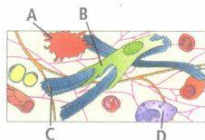
(iii) Columnar epithelium present in gastric glands, intestinal glands and pancreatic lobules, has a secretory role and is called as glandular epithelium.

(iv) Epithelial tissue arises only from the ectoderm of embryo and is usually supplied with blood vessels.

a) (i) and (iii)    b) (ii) and (iii)    c) (ii) and (iv)    d) (i) and (iv)

24. Given is the diagrammatic sketch of a certain type of connective tissue.

Identify the parts labelled as A, B, C and D and select the correct option.



a)

A	B	C	D
Macrophage	Fibroblast	Collagen fibres	Mast cell

c)

A	B	C	D
Macrophage	Collagen fibre	Fibroblast	Mast cell

b)

A	B	C	D
Mast cell	Macrophage	Fibroblast	Collagen fibre

d)

A	B	C	D
Mast cell	Collagen fibre	Fibroblast	Macrophage

25. Which of the following is correct for the common cockroach?

a) Malpighian tubules are excretory organs projecting out from the colon.

b) Oxygen is transported by haemoglobin in blood.    c) Nitrogenous excretory product is urea.

d) The food is grinded by mandibles and gizzard.

26. Which one of the following statements is correct regarding cockroach?

a) Head is oval in shape.    b) There are 10 pairs of spiracles (2 pairs on thorax and 8 pairs on abdomen).

c) Heart is differentiated into funnel shaped chambers with setae on either side.

- d) Each eye consists of about 1000 hexagonal ommatidia.
27. If the head of cockroach is removed, it may live for few days because \_\_\_\_\_ .
- a) The head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.
  - b) The head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body.
  - c) The supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen.
  - d) The cockroach does not have nervous system.
28. Consider the following statements (i) - (iii), each with one or two blanks.
- (i) Bones have a hard and non-pliable ground substance (1) and (2) which give bone its strength.
  - (ii) Some of the columnar or cuboidal cells get specialised for secretion and are called (3) epithelium.
  - (iii) (4) junctions help to stop substances from leaking across a tissue.
- Which one of the following options, gives the correct fill ups for the respective blanks from (1) to (4) in the statements?
- a) (3)-glandular, (4)-Tight    b) (1)-calcium salts, (2)-collagen fibres, (3)-compound, (4) - Excretory
  - c) (3)-glandular, (4)-Adhering    d) (1)-magnesium salts, (2)-elastic fibres, (3)-compound
29. One very special feature in the earthworm is that
- a) fertilisation of eggs occurs inside the body
  - b) the typhlosole greatly increases the effective absorption area of intestine
  - c) the S-shaped setae embedded in the integument are the defensive weapons used against the enemies
  - d) it has a long dorsal tubular heart.
30. **Assertion:** Cockroach shows sexual dimorphism.  
**Reason :** The female cockroach bears a pair of short thread like anal styles.
- a) If both assertion and reason are true and reason is the correct explanation of assertion.
  - b) If both assertion and reason are true but reason is not the correct explanation of assertion.
  - c) If assertion is true but reason is false.    d) If both assertion and reason are false.
31. Frog's heart when taken out of the body continues to beat for sometime. Select the best option from the following statements.
- (A) Frog is a poikilotherm.
  - (B) Frog does not have any coronary circulation.
  - (C) Heart is 'myogenic' in nature.
  - (D) Heart is autoexcitable
- Options:
- a) only (D)    b) (A) and (B)    c) (C) and (D)    d) only (C)
32. Which of the following statements is incorrect about the nervous system of earthworm?
- a) Nervous system is basically represented by ganglia arranged on ventral nerve cord.
  - b) In 3<sup>rd</sup> and 4<sup>th</sup> segment, the nerve cord bifurcates and joins the cerebral ganglia dorsally to form a nerve ring.
  - c) The cerebral ganglia along with other nerves in the ring integrate sensory input as well as command muscular responses of the body.
  - d) None of these
33. Formation of cartilage bones involves.
- a) Deposition of bony matter by osteoblasts and resorption by chondroclasts
  - b) Deposition of bony matter by osteoclasts and resorption by chondroblasts
  - c) Only deposition of bony matter by osteoblasts only    d) Deposition of bony matter by osteoblasts only
34. Component of blood responsible for producing antibodies is \_\_\_\_\_ .
- a) Thrombocytes    b) Monocytes    c) Erythrocytes    d) Lymphocytes

35. Which one of the following correctly describes the location of same body parts in the earthworm *Pheretima*?
- Four pairs of spermathecae in 4-7 segments
  - One pair of ovaries attached at inter segmental septum of 14th and 15th segments
  - Two pairs of testes in 10th and 11th segments
  - Two pairs of accessory glands in 16th -18th segments
36. **Assertion:** Cell junctions are present in the epithelium and other tissues.  
**Reason:** Among cell junctions, adhering junctions help to stop substances from leaking across a tissue.
- If both assertion and reason are true and reason is the correct explanation of assertion.
  - If both assertion and reason are true but reason is not the correct explanation of assertion.
  - If assertion is true but reason is false.
  - If both assertion and reason are false.
37. Which of the following happens in the common cockroach?
- Malpighian tubules are excretory organs projecting out from the colon
  - Oxygen is transported by haemoglobin in blood
  - Nitrogenous excretory product is urea
  - The food is grounded by mandibles and gizzard
38. Cardiac muscle cells differ from striated muscle cells in having
- a centrally located nucleus
  - different myofibrils
  - fewer mitochondria
  - no sarcoplasmic reticulum.
39. Which of the following features is used to identify a male cockroach from a female cockroach?
- Forewings with darker tegmina
  - Presence of caudal styles
  - Presence of boat shaped sternum on the 9th abdominal of anal cerci
  - Presence of anal cerci
40. Read the statements regarding frog. Which of the statements is/are correct and incorrect?
- The medulla oblongata passes out through foramen of Monro and continues into spinal cord.
  - Vasa efferentia are 10-12 in number that arise from testes.
  - Ovaries have no functional connection with kidneys.
  - Frogs are uricotelic.
- Statements (i), (ii) and (iii) are correct while statement (iv) is incorrect.
  - Statements (i) and (ii) are correct while statements (iii) and (iv) are incorrect.
  - Statements (ii) and (iii) are correct while statements (i) and (iv) are incorrect.
  - Statements (ii), (iii) and (iv) are correct while statement (i) is incorrect.
41. **Assertion:** Neurons protect and support the neuroglial cells.  
**Reason:** Neuroglial cells make up ninety per cent neural tissue in our body.
- If both assertion and reason are true and reason is the correct explanation of assertion.
  - If both assertion and reason are true but reason is not the correct explanation of assertion.
  - If assertion is true but reason is false.
  - If both assertion and reason are false.
42. Smooth muscles are:
- involuntary, fusiform, non-striated
  - voluntary, multinucleate, cylindrical
  - involuntary, cylindrical, striated
  - voluntary, spindle-shaped, uninucleate
43. Which cells do not form layer and remain structurally separate?
- Epithelial cells
  - Muscle cells
  - Nerve cells
  - Gland cells
44. In which one of the following preparations are you likely to come across cell junctions most frequently?
- Thrombocytes
  - Tendon
  - Hyaline cartilage
  - Ciliated epithelium.
45. Vitamin-K is required for \_\_\_\_\_.
- Formation of thromboplastin
  - Conversion of fibrinogen to fibrin
  - Conversion of prothrombin to thrombin
  - Synthesis of prothrombin
46. **Assertion:** Earthworms are known as 'friends of farmers'.  
**Reason:** Earthworms make burrows in the soil and make the soil porous, which helps in respiration and penetration of developing plant roots.

- a) If both assertion and reason are true and reason is the correct explanation of assertion.  
 b) If both assertion and reason are true but reason is not the correct explanation of assertion.  
 c) If assertion is true but reason is false. d) If both assertion and reason are false.

47. Bone is connected to muscles with the help of

- a) ligament b) cartilage c) tendon d) none of these.

48. 'Mummies' of Egypt still have their arteries preserved due to the presence of

- a) yellow elastic connective tissue fibres b) white fibrous connective tissue fibres c) cartilage d) valves.

49. Primary function of enteronephric nephridia of Pheretima is:

- a) osmoregulation b) excretion of nitrogenous wastes c) respiration d) locomotion.

50. Choose the correctly matched pair:

- a) Tendon-Specialised connective tissue b) Adipose tissue- Dense connective tissue  
 c) Areolar tissue - Loose connective tissue d) Cartilage-Loose connective tissue

51. Match column I with column II and select the correct option from the codes given below.

	Column - I		Column - II
A.	Simple columnar	(i)	Wall of heart epithelium
B.	Cardiac muscle	(ii)	Bone joints
C.	Adipose tissue	(iii)	Inner lining of stomach and intestine
D.	Hyaline cartilage	(iv)	Below the skin, in the abdomen, buttocks, thighs and breasts
		(v)	Diaphragm

- a) A-(iii), B-(i), C-(ii), D-(iv) b) A-(iii), B-(v), C-(ii), D-(iv) c) A-(i), B-(iii), C-(iv), D-(v)  
 d) A-(iii), B-(i), C-(iv), D-(ii)

52. **Assertion:** Blood glands are present in earthworm.

**Reason:** Earthworm has an open type of blood vascular system.

- a) If both assertion and reason are true and reason is the correct explanation of assertion.  
 b) If both assertion and reason are true but reason is not the correct explanation of assertion  
 c) If assertion is true but reason is false. d) If both assertion and reason are false.

53. **Assertion:** The alimentary canal of the frog is short.

**Reason:** Frogs are carnivores.

- a) If both assertion and reason are true and reason is the correct explanation of assertion.  
 b) If both assertion and reason are true but reason is not the correct explanation of assertion.  
 c) If assertion is true but reason is false. d) If both assertion and reason are false.

54. Match the following with reference to cockroach and choose the correct option.

A.	Phallomere	(i)	Chain of developing ova
B.	Gonopore	(ii)	Bundles of sperm
C.	Spermatophore	(iii)	Opening of the ejaculatory duct
D.	Ovarioles	(iv)	The external genitalia

- a) A-(iii), B-(iv), C-(ii), D-(i) b) A-(iv), B-(iii), C-(ii), D-(i) c) A-(iv), B-(ii), C-(iii), D-(i)  
 d) A-(ii), B-(iv), C-(iii), D-(i)

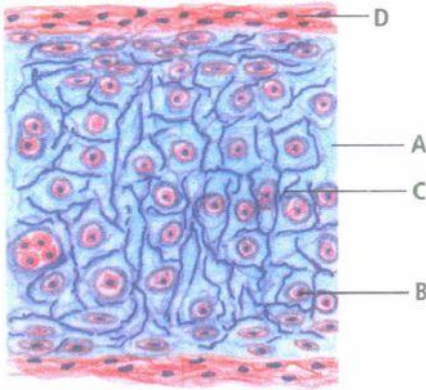
55. If a live earthworm is pricked with a needle on its outer surface without damaging its gut, the fluid that comes out is:

- a) Coelomic fluid b) Haemolymph c) Slimy mucus d) Excretory fluid

56. The epithelial tissue present on the inner surface of bronchioles and fallopian tube is:

- a) Glandular b) Ciliated c) Squamous d) Cuboidal

57. In the given diagram of a section of hyaline cartilage, the different parts have been indicated by alphabets. Choose the answer in which these alphabets correctly match with the parts they indicate.



a)

A	B	C	D
Perichondrium	Chondrocyte	Lacuna	Capsular matrix

b)

A	B	C	D
Blood vessel	Chondrocyte	Lacuna	Perichondrium

c)

A	B	C	D
Matrix	Chondrocyte	Lacuna	Perichondrium

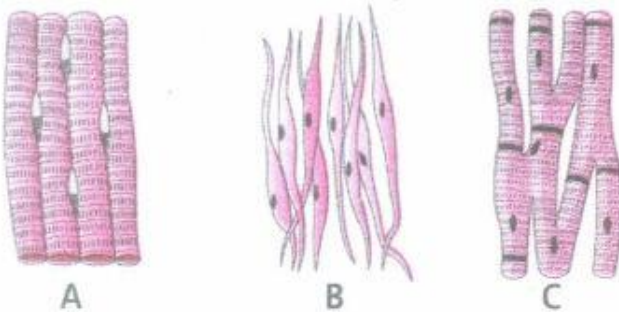
d)

A	B	C	D
Matrix	Lacuna	Chondrocyte	Capsular matrix

58. Pheretima and its close relatives derive nourishment from:

- a) Small pieces of fresh fallen leaves of maize, etc    b) Sugarcane roots  
c) Decaying fallen leaves and soil organic matter    d) Oil insects

59. Identify the figures A, B, C showing different types of muscle and select the correct option.



a)

A	B	C
Smooth muscle	Striated muscle	Cardiac muscle

b)

A	B	C
Cardiac muscle	Smooth muscle	Striated muscle

c)

A	B	C
Striated muscle	Smooth muscle	Cardiac muscle

d)

A	B	C
Involuntary muscle	Voluntary muscle	Heart muscle

60. Which of the following is not a connective tissue?

- a) Bone    b) Cartilage    c) Blood    d) Muscles