



## BIOLOGY

### BOOKS - MTG BIOLOGY (ENGLISH)

#### STRUCTURAL ORGANISATION IN ANIMALS

##### Mcqs

1. Simple cuboidal epithelium lines all the following structures except the

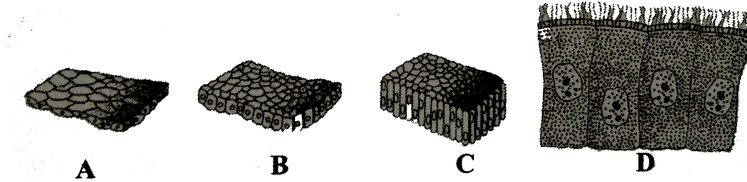
- A. ovary
- B. pancreatic ducts
- C. thyroid follicles
- D. Fallopian tube

**Answer: D**



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2. Identify the following simple epithelial tissues and select the correct option



- |    | A        | B        | C        | D                                   |
|----|----------|----------|----------|-------------------------------------|
| A. | Cuboidal | Squamous | Columnar | Ciliated columnar                   |
| B. | Squamous | Cuboidal | Columnar | Ciliated columnar                   |
| C. | Squamous | Columnar | Cuboidal | Ciliated cuboidal                   |
| D. | Squamous | Columnar | Cuboidal | Pseudostratified columnar(ciliated) |

Answer: B



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3. Lining of intestine of man is

A. brush bordered

B. ciliated

C. non-keratinised

D. keratinised

**Answer: A**



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**4.** Which of the following statemens 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) Cillated 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)

**Answer: B**



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5. The type of epithelial cells which line the inner surface of Fallopian tubes, bronchioles and small bronchi are known as

A. squamous epithelium

B. columnar epithelium

C. ciliated epithelium

D. cubical epithelium

**Answer: C**



6. Pick the odd one in each series and select the correct option

(i) Areolar tissue, blood, neuron, tendon

(ii) Salivary gland, gastric gland, tear gland, thyroid gland

(iii) Adrenal gland, sweat gland, milk gland, oil gland

- |        |                |                |               |
|--------|----------------|----------------|---------------|
|        | (i)            | (ii)           | (iii)         |
| A. (a) | Areolar tissue | Gastric gland  | Milk gland    |
|        | (i)            | (ii)           | (iii)         |
| B. (b) | Blood          | Tear gland     | Oil gland     |
|        | (i)            | (ii)           | (iii)         |
| C. (c) | Tendon         | Salivary gland | Sweat gland   |
|        | (i)            | (ii)           | (iii)         |
| D. (d) | Neuron         | Thyroid gland  | Adrenal gland |

**Answer: D**

7. Pseudostratified epithelium is found in

- A. rectum
- B. urinary bladder
- C. wall of oesophagus
- D. inner lining of bronchiole

**Answer: D**



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**8. Read the following statement and select the correct option**

Statement 1 : Urinary bladder is lined by transitional epithelium

Statement 2 : Transitional epithelium keeps the size of bladder constant at all time.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: B**



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**9.** The cell junctions namely tight, adhering and gap junctions are found in

- A. connective tissues
- B. epithelial tissues
- C. neural tissues
- D. muscular tissues

**Answer: B**



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**10.** 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 junction 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)

**Answer: D**



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**11.** Blood brain barrier in adults have \_\_\_\_\_ junctions between cells

- A. tight
- B. adhering
- C. gap
- D. none of these

**Answer: A**



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**12.** 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

**Answer: A**



**13.** Which of the following statements is/are not correct regarding connective tissues ?

- (i) They are most abundant and widely distributed in the body of complex animals
- (ii) They connect and support other tissues
- (iii) They include diverse tissues such as bones, cartilage, tendons, adipose and other loose connective tissues.
- (iv) They form the internal and external lining of many organs
- (v) In all connective tissues except blood, the cells secrete fibres of structural proteins like collagen and elastin.

A. (iv) only

B. (v) only

C. (i) and (ii)

D. (iii) and (v)

**Answer: A**



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**14.** Areolar connective tissue joins

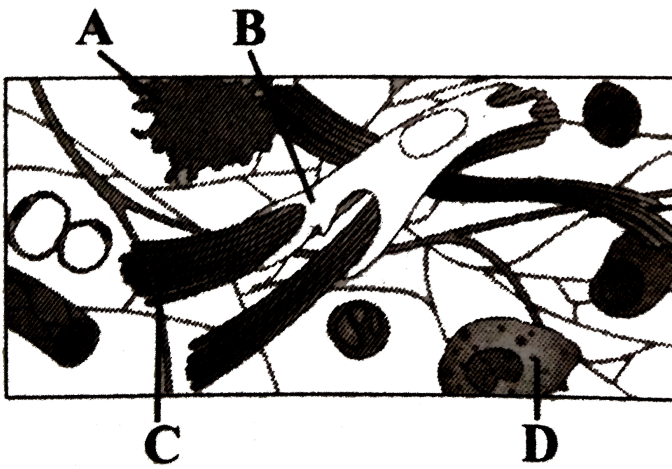
- A. bone with bone
- B. fat body with muscles
- C. integument with muscles
- D. bone with muscles

**Answer: C**



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**15.** 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          | B              | C               | D              |
| A. | Macrophage | Fibroblast     | Collagen fibres | Mast cell      |
|    | A          | B              | C               | D              |
| B. | Mast cell  | Macrophage     | Fibroblast      | Collagen fibre |
|    | A          | B              | C               | D              |
| C. | Macrophage | Collagen fibre | Fibroblast      | Mast cell      |
|    | A          | B              | C               | D              |
| D. | Mast cell  | Collagen fibre | Fibroblast      | Macrophage     |

**Answer: A**



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**16.** Which one of the following contains the largest quantity of extracellular material ?



- A. Striated muscle
- B. Areolar tissue
- C. Stratified epithelium
- D. Myelinated nerve fibres

**Answer: B**



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**17.** Consider the following statement (i)-(iii) and select the correct option stating which ones are true (T) and which one are false (F)

(i) Keratinised stratified squamous epithelium covers moist surfaces like buccal cavity

(ii) Fibroblasts store fat in adipose tissue

(iii) Urinary bladder is lined by a stratified epithelium.

- |    |     |      |       |
|----|-----|------|-------|
| A. | (i) | (ii) | (iii) |
|    | F   | T    | T     |
| B. | (i) | (ii) | (iii) |
|    | T   | F    | F     |

- |    |     |      |       |
|----|-----|------|-------|
|    | (i) | (ii) | (iii) |
| C. | T   | F    | T     |
|    | (i) | (ii) | (iii) |
| D. | T   | T    | F     |

**Answer: B**



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**18.** Bone is connected to muscles with the help of

- A. ligament
- B. cartilage
- C. tendon
- D. none of these

**Answer: C**



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19. Given below are four statement (i) - (iv) each with two blanks. Select the option which correctly fills up the blanks in any two of these statements

(i) The columnar epithelium is composed of 1 and slender cells. Their 2 are located at the base

(ii) Collagen fibres provide 3 and elastin fibres provide 4 and elasticity to the tissue

(iii) Adipose tissue is a 5 type of connective tissue located mainly beneath 6

(iv) Tendons attach 7 to bones and ligaments attach 8 to bones.

A. (1) tall, (2) nuclei, (7) bones, (8) muscles

B. (1) short, (2) organelles, (3) strength, (4) flexibility

C. (3) strength, (4) flexibility, (5) loose, (6) skin

D. (5) dense, (6) muscles, (7) muscles, (8) bones

**Answer: C**



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**20.** Cartilage is formed by

- A. chondrocytes
- B. osteoblasts
- C. osteoclasts
- D. fibroblasts

**Answer: A**



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**21.** Read the following statements and select the correct ones

In simple cuboidal epithelium, nuclei are rounded and lie in the centre of the cells

(ii) None-keratinised epithelium is impermeable to water

(iii) Yellow elastic fibrocartilage makes cartilage flexible

(iv) Areolar tissue forms a shock absorbing cushion around the eye balls and kidneys.

- A. (i) and (iii)
- B. (i) and (ii)
- C. (iii) and (iv)
- D. (ii) and (iv)

**Answer: A**



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**22.** Which of the following is a transparent tissue ?

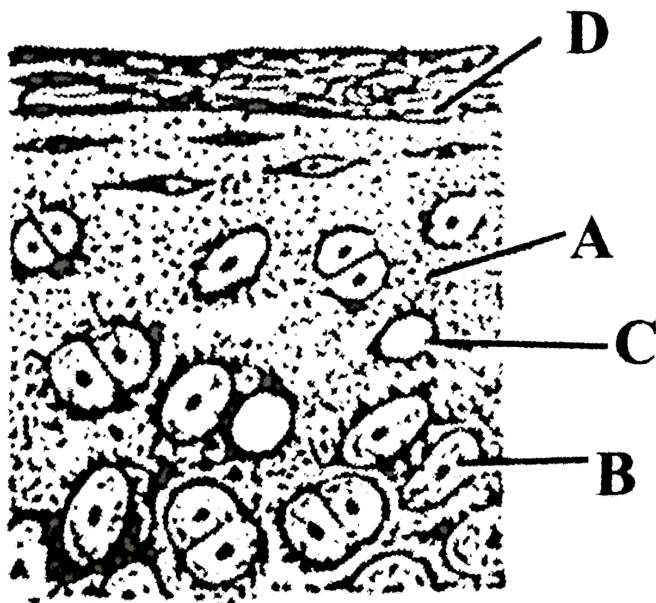
- A. Tendon
- B. Fibrous cartilage
- C. Hyaline cartilage
- D. All of these

Answer: C



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23. 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             | B           | C      | D               |
| A. | Perichondrium | Chondrocyte | Lacuna | Capsular matrix |
| B. | A             | B           | C      | D               |
|    | Blood vessel  | Chondrocyte | Lacuna | Perichondrium   |

	A	B	C	D
C.	Matrix	Chondrocyte	Lacuna	Perichondrium
	A	B	C	D
D.	Matrix	Lacuna	Chondrocyte	Capsular matrix

**Answer: C**



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

Column I		Column II
A. Hyaline cartilage	(i)	Pectoral girdle of frog
B. Fibrous cartilage	(ii)	Long bones, sternum, ribs
C. Elastic cartilage	(iii)	Pubic symphysis
D. Calcified cartilage	(iv)	Eustachian tube, epiglottis

A. A-(i),B-(ii),C-(iii),D-(iv)

B. A-(ii),B-(iii),C-(iv),D-(i)

C. A-(ii),B-(ic),C-(iii),D-(i)

D. A-(iv),B-(iii),C-(ii),D-(i)

**Answer: B**



25. Consider the following statements (i) - (iii), each with one or two blanks

(i) Bones have a hard and non-pliable ground substance rich in 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 fills 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

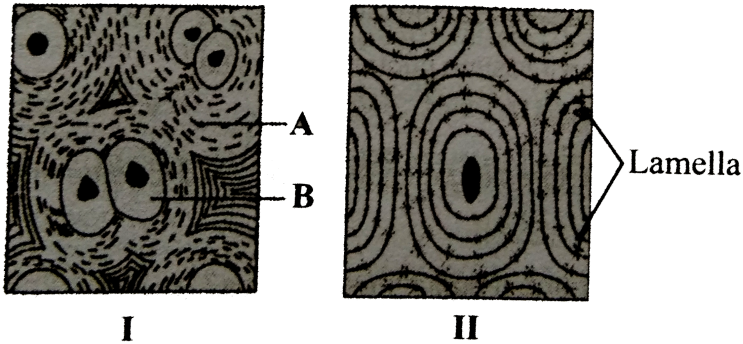
D. (1)-magnesium salts, (2)-elastic fibres, (3)-compound

**Answer: A**



26. Given figures (*I* and *II*) show two specialised connective tissues.

Identify the figures *I*, *II* and the parts labelled as A and B



- |    |           |           |                 |              |
|----|-----------|-----------|-----------------|--------------|
|    | I         | II        | A               | B            |
| A. | Cartilage | Bone      | Collagen fibres | Chondrocyte  |
|    | I         | II        | A               | B            |
| B. | Cartilage | Bone      | Collagen fibres | Chondroclast |
|    | I         | II        | A               | B            |
| C. | Bone      | Cartilage | Microtubules    | Osteoblast   |
|    | I         | II        | A               | B            |
| D. | Bone      | Cartilage | Collagen fibres | Osteoblast   |

**Answer: A**

27. Consider the following statements (i) - (iii), each with two blanks

(i) Pseudostratified epithelium lines the 1 tract while transitional epithelium lines the 2 tract

(ii) Lacunae of bones house 3 while lacunae of cartilage contain 4

(iii) Tendon contain bundles of 5 fibres and rows of 6 cells between the them

Which one of the following options, gives the correct fill ups for the respective blank numbers from (1) to (6) in the statements ?

A. (1)-respiratory, (2)-urinary, (5)-white, (6)-fibroblast

B. (1)-urinary, (2)-respiratory, (3)-osteocytes, (4)-chondrocytes

C. (3)-chondrocytes, (4)-osteocytes, (5)-yellow, (6)-fibroblast

D. (1)-respiratory, (2)-urinary, (3)-chondrocytes, (4)-osteocytes

**Answer: A**



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**28.** Mammalian bone differs from cartilage in the presence of

- A. lymph vessels
- B. collagen
- C. blood vessels
- D. Haversian canals

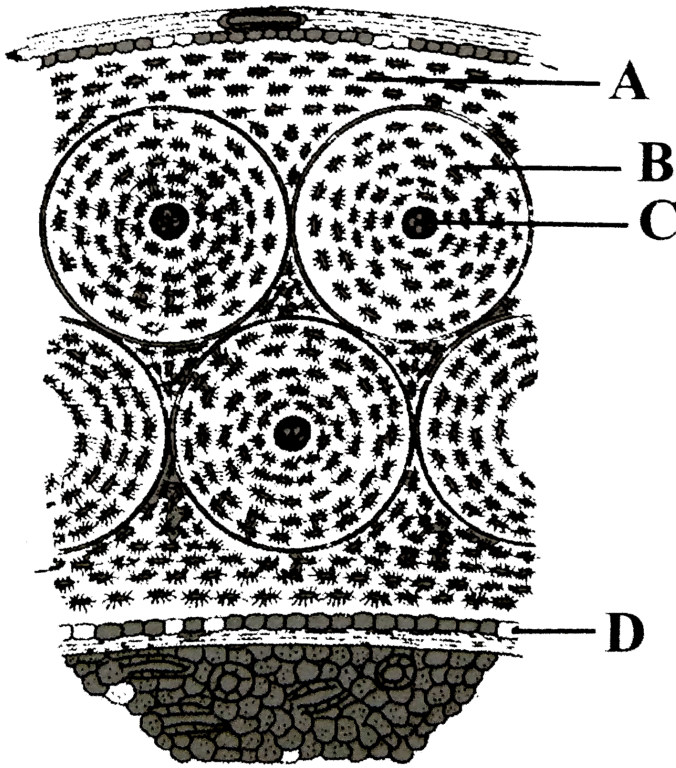
**Answer: D**



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**29.** In the given diagram is a section of bone tissue, certain parts have been indicated by alphabets. Select the answer in which these alphabets

have been correctly matched with the parts which they indicate



A. A-Interstitial lamellae,B-Nerve, C-Canaliculi,D-Haversian canal

B. A-Interstitial lamellae, B-Osteocytes, C-Haversian canal,D-Canaliculi

C. A-Interstitial lamellae, B-Osteocytes, C-Nerve, D-Blood vessels

D. A-Interstitial lamellae, B-Osteocytes,C-Haversian canal,D-Endosteum

**Answer: D**



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**30.** Read the following statement and select the correct option

Statement 1 : Bone and cartilage are rigid connective tissues

Statement 2 : Blood is a connective tissue with fluid (plasma) matrix.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: A**

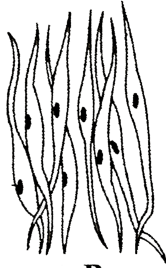


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**31.** Identify the figures A,B,C showing different types of muscle and select the correct option



**A**



**B**



**C**

- |    |                    |                  |                 |
|----|--------------------|------------------|-----------------|
|    | A                  | B                | C               |
| A. | Smooth muscle      | Striated muscle  | Cardiac muscle  |
|    | A                  | B                | C               |
| B. | Cardiac muscle     | Smooth muscle    | Striated muscle |
|    | A                  | B                | C               |
| C. | Striated muscle    | Smooth muscle    | Cardiac muscle  |
|    | A                  | B                | C               |
| D. | Involuntary muscle | Voluntary muscle | Heart muscle    |

**Answer: C**



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**32.** Match column *I* with column *II* and select the correct option from the code given below.

Column I	Column II
A. Pseudostratified epithelium	(i) Connective tissue
B. Matrix	(ii) absorption
C. Striated myofibril	(iii) Trachea
D. Mesothelium	(iv) Body cavity lining
E. Microvilli	(v) Multinucleate

A. A-(i),B-(ii),C-(iii),D-(iv),E-(v)

B. A-(ii),B-(v),C-(iv),D-(i),E-(iii)

C. A-(iii),B-(i),C-(v),D-(iv),E-(ii)

D. A-(iv),B-(iii),C-(v),D-(i),E-(ii)

**Answer: C**



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**33. Which of the following is a wrongly matched pair ?**

A. Unicellular glandular cells - Goblet cell

B. Saliva - Exocrine secretion

C. Fusiform fibres - Smooth muscle

## D. Cartilage - Areolar tissue

**Answer: D**



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**34.** Consider the following four statements (i) - (iv) and select the correct option stating which ones are true (T) and which ones are false (F)

(i) The epithelium of proximal convoluted tubule (PCT) of nephron in the kidney has microvilli

(ii) Simple epithelium covers the dry surface of the skin, the moist surface of buccal cavity, pharynx, inner lining of salivary glands and of pancreatic ducts

(iii) The wall of internal organs such as the blood vessels, stomach and intestine contains skeletal muscle

(iv) Bone marrow in some bones is the site of production of blood cells.

- |    |          |           |            |           |
|----|----------|-----------|------------|-----------|
| A. | (i)<br>T | (ii)<br>F | (iii)<br>F | (iv)<br>T |
| B. | (i)<br>F | (ii)<br>F | (iii)<br>T | (iv)<br>T |



- |    |     |      |       |      |
|----|-----|------|-------|------|
|    | (i) | (ii) | (iii) | (iv) |
| C. | T   | T    | F     | F    |
|    | (i) | (ii) | (iii) | (iv) |
| D. | T   | F    | T     | F    |

**Answer: A**



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**35.** Read the following four statement (i) - (iv) having certain mistakes in two of them.

(i) Adipose tissue is a type of dense connective tissue located beneath the skin

(ii) Compound epithelium has extensive role in absorption and secretion

(iii) Most of the cartilages in vertebrate embryos are replaced by bones in adults

(iv) Smooth muscles are involuntary as their functioning cannot be directly controlled

Which of the above statements have mistakes ?

A. (ii) and (iii)

B. (iii) and (iv)

C. (i) and (iii)

D. (i) and (ii)

**Answer: D**



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**36.** 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, th |
|                      | (v)   | Diaphragm                                    |

A. a) A-(iii),B-(i),C-(ii),D-(iv)

B. b) A-(iii),B-(v),C-(ii),D-(iv)

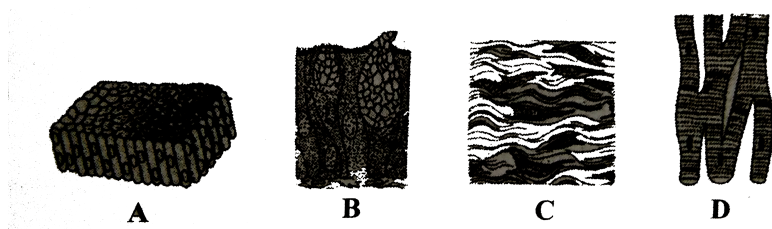
C. c) A-(i),B-(iii),C-(iv),D-(v)

D. d) A-(iii),B-(i),C-(iv),D-(ii)

**Answer: D**

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**37.** The four figures (A, B, C and D) given below represent four different types of animal tissues. Which one of these is correctly identified in the given options along with its correct location and function ?



- |    | Tissue                 | Location  | Function            |
|----|------------------------|-----------|---------------------|
| A. | B-Glandular epithelium | Intestine | secretion           |
| B. | C-Collagen fibres      | Cartilage | Attach bone to bone |
| C. | D-Smooth muscle tissue | Heart     | Heart contraction   |

D.

- |  | Tissue                | Location | Function                 |
|--|-----------------------|----------|--------------------------|
|  | A-Columnar epithelium | Nephron  | secretion and absorption |

**Answer: A**



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**38.** Read the following statement and select the correct option

Statement 1 : Cardiac muscle of the heart is striated and has intercalated discs between its fibres (cells)

Statement 2 : It provides quick, powerful and rhythmic contractions to the heart.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: A**



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**39.** Which one of the following is correct pairing of a body part with the kind of muscle tissue present in it ?

- A. Biceps of upper arm - Smooth muscle fibres
- B. Abdominal wall - Voluntary smooth muscle
- C. Iris - Involuntary smooth muscle
- D. Heart wall - Involuntary unstriated muscle

**Answer: C**



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**40.** Cardiac muscle cells differ from striated muscle cells in having

- A. a centrally located nucleus
- B. differeny myofibrils
- C. fewer mitochondria
- D. no sarcoplasmic reticulum

**Answer: A**



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**41.** Cardiac muscles are different from skeletal muscles as they are

A. smooth

B. voluntary

C. non-striated

D. involuntary

**Answer: D**



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**42.** Read the following statements and select the correct option

(i) Blood cells secrete fibres of structural proteins called collagen and elastin

- (ii) Neuroglial cells protect and support the nephrons
- (iii) Osteocytes are present in spaces called lacunae
- (iv) Striated muscle fibres are bundled together in a parallel fashion
- (v) Biceps are involuntary and striated.

- A. Statements (iii) and (iv) are incorrect
- B. Statement (ii) and (iv) are incorrect
- C. Statement (i) and (iii) are incorrect
- D. Statements (i),(ii) and (v) are incorrect.

**Answer: D**



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**43.** Which of the following cells do not form layer and remain structurally separate ?

- A. Epithelial cells
- B. Muscle cells

C. Nerve cells

D. Gland cells

**Answer: C**



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**44.** 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 nervous 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

**Answer: C**



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**45.** Nerve cell do not divide because they do not have

A. nucleus

B. centrosome

C. Golgi body

D. mitochondria

**Answer: B**



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**46.** Earthworms have no skeleton but during burrowing, the anterior end becomes turgid and acts as a hydraulic skeleton. It is due to

- A. gut peristalsis
- B. setae
- C. coelomic fluid
- D. blood

**Answer: C**



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**47.** Which of the following layers you will find in the body wall of earthworm (from outside to inside) ?

- A. a) Non-cellular cuticle, epidermis, circular muscles, longitudinal muscles, coelomic epithelium

B. b) Cuticle, epidermis, longitudinal muscles, circular muscles, coelomic epithelium

C. c) Non-cellular cuticle, epidermis, coelomic epithelium, circular muscles, longitudinal muscles

D. d) Cuticle, epidermis, peritoneal muscles

**Answer: A**



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**48.** Pheretima and its close relatives derive nourishment from

A. sugarcane roots

B. decaying fallen leaves and soil organic matter

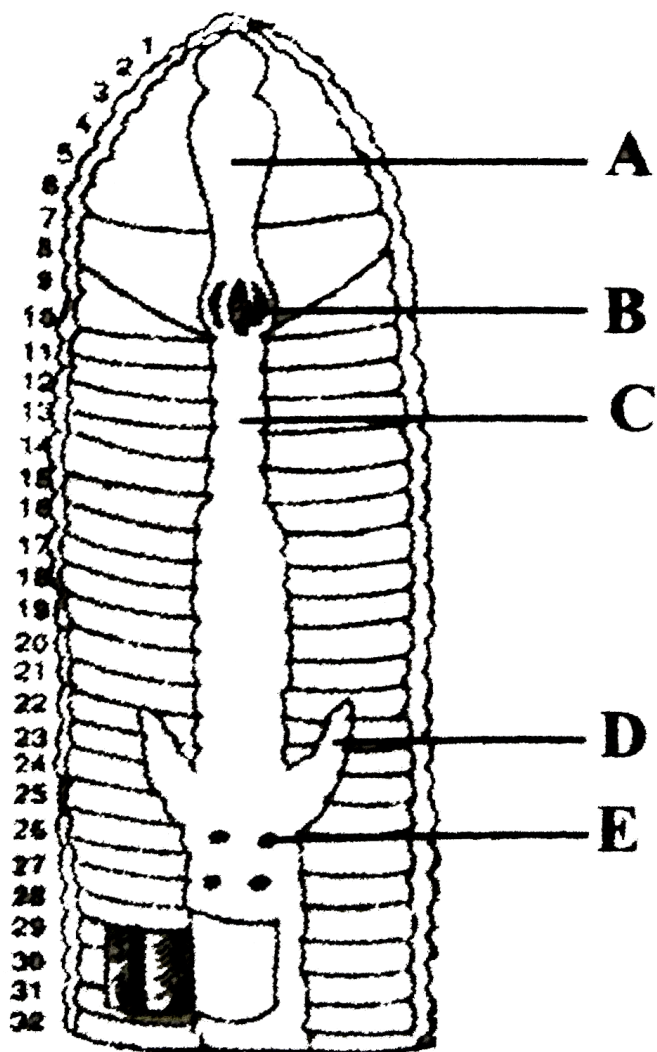
C. soil insects

D. small pieces of fresh fallen leaves of maize etc

**Answer: B**



49. Given is the figure of alimentary canal of earthworm. Select the option that correctly identifies the parts labelled as A to E



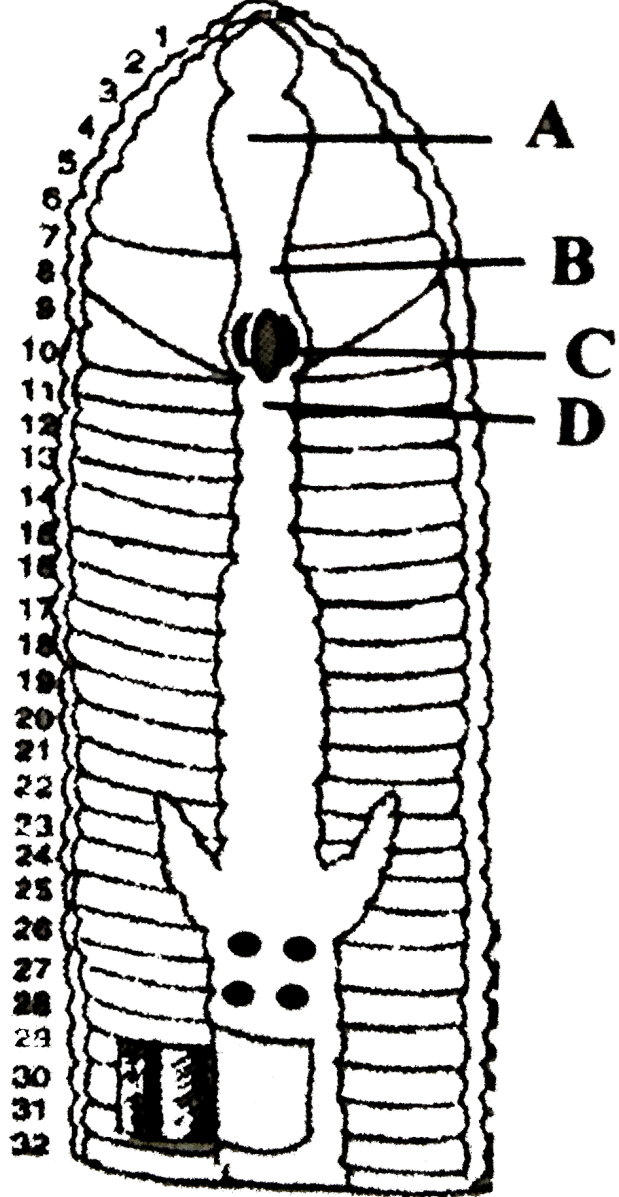
	A	B	C	D	E
A.	Pharynx	Stomach	Caecum	Gizzard	Lymph gland
	A	B	C	D	E
B.	Gizzard	Pharynx	Stomach	Caecum	Lymph gland
	A	B	C	D	E
C.	Pharynx	Gizzard	Stomach	Caecum	Lymph gland
	A	B	C	D	E
D.	Gizzard	Pharynx	Liver	Stomach	Villi

**Answer: C**



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**50.** Which part of the alimentary canal of earthworm (in the given figure) helps in grinding the soil particles ?



A. a) A

B. b) B

C. c) C

D. d) D

**Answer: C**



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**51.** One very special feature in the earthworm is that

- A. a) fertilisation of eggs occurs inside the body
- B. b) the typhlosole greatly increases the effective absorption area of intestine
- C. c) the S-shaped setae embedded in the integument are the defensive weapons used against the enemies
- D. d) it has a long dorsal tubular heart

**Answer: B**



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

Column I (Parts of alimentary canal of earthworm)		Column II (Respective segments)	
A. Buccal cavity	(i)	1-3	
B. Pharynx	(ii)	3-4	
C. Oesophagus	(iii)	5-7	
D. Gizzard	(iv)	8-9	
E. Stomach	(v)	9-14	
F. Intestine	(vi)	15 to last	
G. Typhlosole	(vii)	26-35	

A. A-(i),B-(ii),C-(iii),D-(iv),E-(v),F-(vi),G-(vii)

B. A-(i),B-(ii),C-(iii),D-(v),E-(iv),F-(vi),G-(vii)

C. A-(i),B-(iii),C-(ii),D-(iv),E-(v),F-(vii),G-(vi)

D. A-(i),B-(iii),C-(ii),D-(v),E-(iv),F-(vii),G-(vi)

**Answer: A**



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53. Which of the following is absent in the coelomic fluid of earthworm ?



- A. Salts
- B. Haemoglobin
- C. Corpuscles
- D. Proteins

**Answer: B**



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**54.** The lateral hearts in earthworm

- A. are situated in segments 7 and 9
- B. are situated in segments 6 and 8
- C. are situated in segments 8 and 10
- D. are situated in segments 6 and 11

**Answer: A**



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55. Blood vessels in Pheretima, which have valves are

- A. dorsal
- B. ventral
- C. supra-oesophageal
- D. lateral oesophageal

**Answer: A**



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56. 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

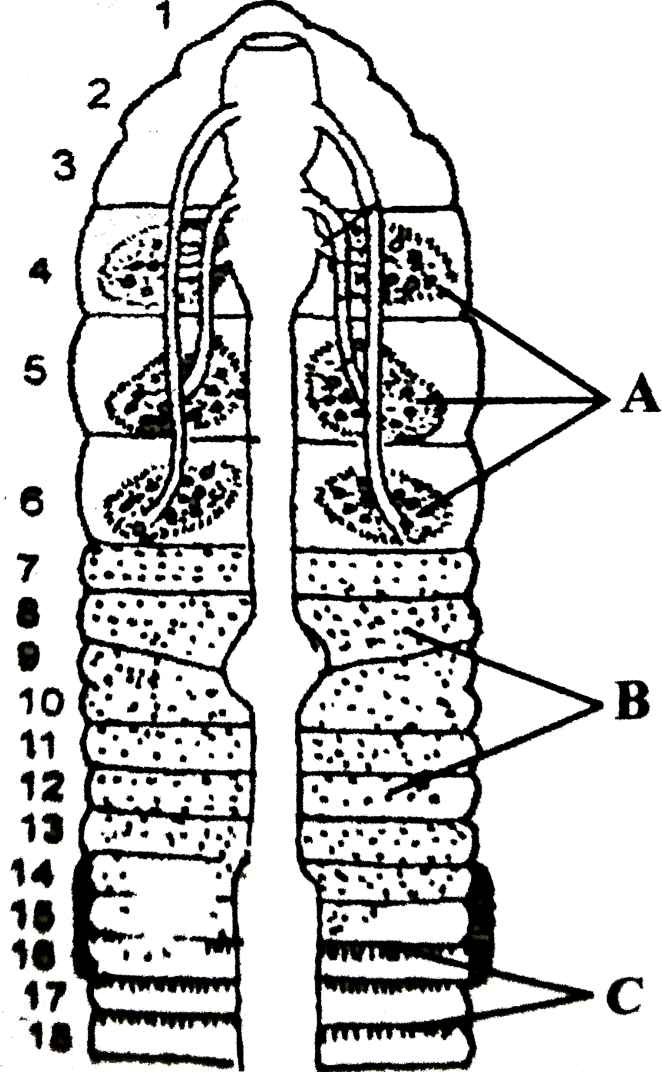
D. leucocyte production

**Answer: D**



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**57.** The figure showing nephridial system of earthworm is given here. Identify the types of nephridia labelled as A, B and C from the list (i) to (iii) given below and select the correct option



(i) Septal nephridia

(ii) Integumentary nephridia

(iii) Tufts of pharyngeal nephridia

- A.    A        B        C  
       (ii)     (i)     (iii)
- B.    A        B        C  
       (iii)    (ii)    (i)

- |    |      |       |       |
|----|------|-------|-------|
|    | A    | B     | C     |
| C. | (ii) | (iii) | (i)   |
|    | A    | B     | C     |
| D. | (i)  | (ii)  | (iii) |

**Answer: B**



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**58.** Which of the following statements is correct about excretion in earthworm ?

- (i) Earthworm is mainly ureotelic
- (ii) Septal nephridia, present on both sides of intersegmental septa of segment 15 to the last open into intestine
- (iii) Integumentary nephridia, attached to lining of body wall of segment 3 to the last, open on the body surface
- (iv) Different types of nephridia are basically similar in structure
- (v) Nephridia regulate the volume and composition of body fluids.

A. (i) and (iv)

B. (iv) and (v)

C. (i),(ii),(iii)

D. All of these

**Answer: D**



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**59.** Primary function of enteronephric nephridia of Pheretima is

A. osmoregulation

B. excretion of nitrogenous wastes

C. respiration

D. locomotion

**Answer: B**



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**60.** 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

**Answer: D**



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**61.** 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

**Answer: C**

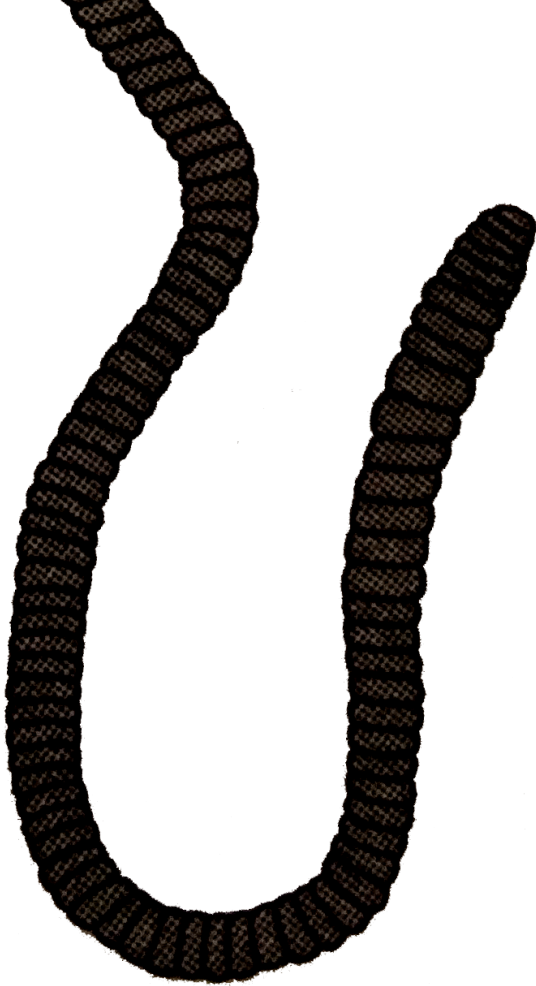


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**62. Which of the following is incorrect for Pheretima ?**







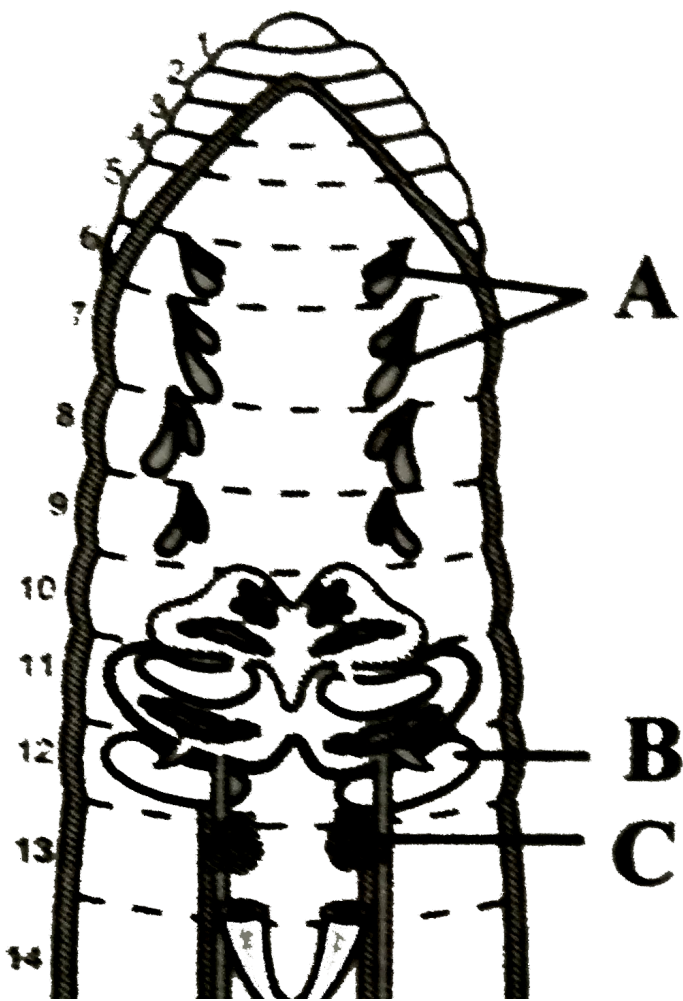
- A. Genital papillae are present on 17<sup>th</sup> and 19<sup>th</sup> segment
- B. Male genital pores are present on 18<sup>th</sup> segment
- C. Clitellum is present on segments 24, 25 and 26
- D. Segments of earthworm are called somites.

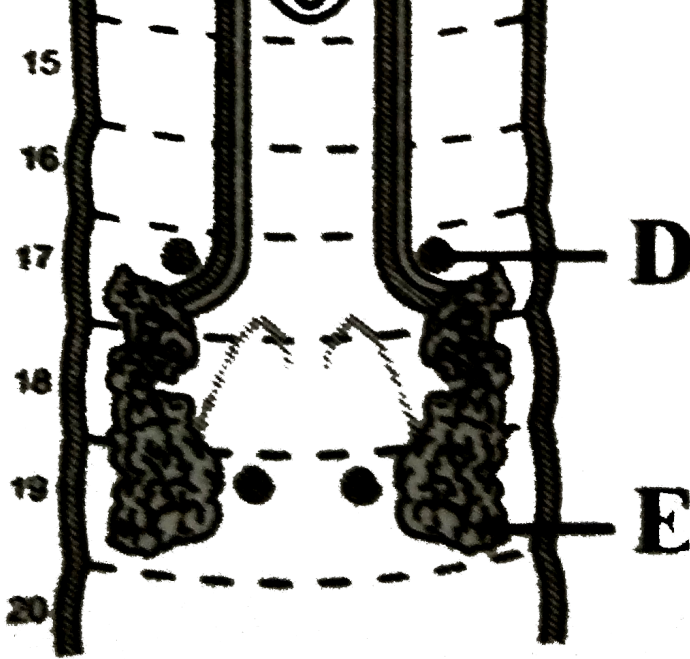
Answer: C



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63. In the given diagram of the reproductive system of earthworm, Identify parts labelled as A, B, C, D, E and select the correct option





- A. Seminal vesicle      B. Spermathecae      C. Prostate gland      D. Ovary      E. Accessory gland
- B. Seminal vesicle      A. Ovary      C. Accessory gland      D. Spermathecae      E. Prostate gland
- C. Spermathecae      B. Ovary      C. Seminal vesicle      D. Ovary      E. Prostate gland
- D. Spermathecae      B. Seminal vesicle      C. Ovary      D. Accessory gland      E. Prostate gland

Answer: D



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64. Which one of the following structures in *Pheretima* is correctly matched with its function ?

- A. Clitellum - Secretes cocoon
- B. Gizzard - Absorbs digested food
- C. Setae - Provides defence against predators
- D. Typhlosole - Storage of extra nutrients

**Answer: A**



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

Column I

Column II

- |                            |       |                   |
|----------------------------|-------|-------------------|
| A. Vermicomposting         | (i)   | Ectonephric       |
| B. Pharyngeal nephridia    | (ii)  | Locomotion        |
| C. Integumentary nephridia | (iii) | Earthworm         |
| D. Setae                   | (iv)  | Enteronephric     |
| E. Spermathecae            | (v)   | Store spermatozoa |

A. A-(iii),B-(iv),C-(i),D-(ii),E-(v)

B. A-(v),B-(i),C-(iv),D-(ii),E-(iii)

C. A-(iii),B-(ii),C-(iv),D-(i),E-(v)

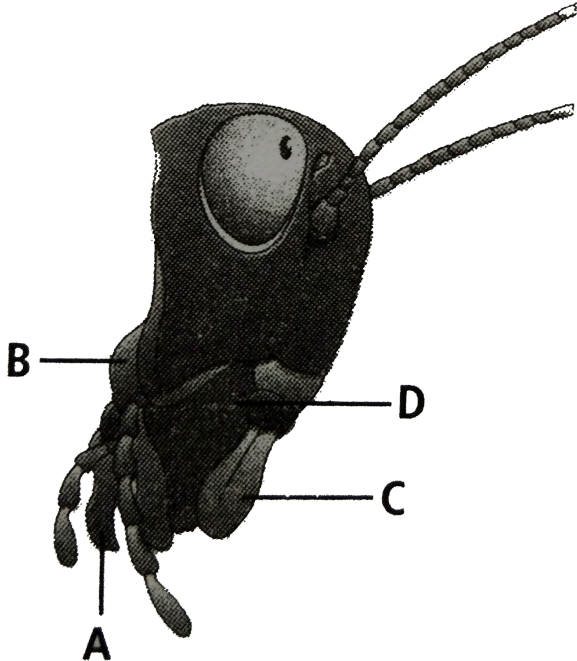
D. A-(iii),B-(v),C-(i),D-(iv),E-(ii)

**Answer: A**



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**66.** The given figure represent heat region of cockroach. In which one of the options all the four parts A,B,C and D are labelled correctly ?

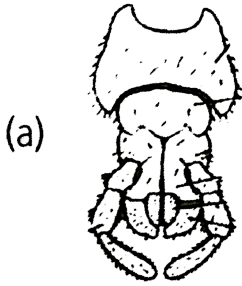


- |    |          |          |          |          |
|----|----------|----------|----------|----------|
|    | A        | B        | C        | D        |
| A. | Labrum   | Mandible | Maxilla  | Labium   |
|    | A        | B        | C        | D        |
| B. | Mandible | Maxilla  | Labium   | Labrum   |
|    | A        | B        | C        | D        |
| C. | Maxilla  | Labium   | Mandible | Labrum   |
|    | A        | B        | C        | D        |
| D. | Labium   | Maxilla  | Labrum   | Mandible |

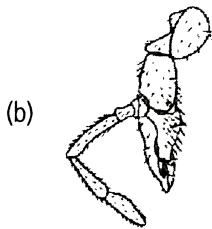
Answer: D

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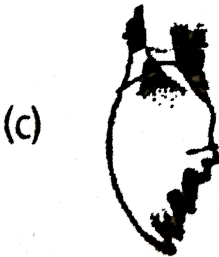
67. Which of the following figures shows the mandibles of cockroach ?



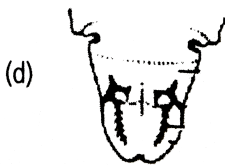
A.



B.



C.



D.

Answer: C



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68. In the mouth parts of a cockroach, the labium forms I while II acts as a tongue.

- A. (i) - upper lip , (ii) - maxilla
- B. (i) - upper lip , (ii) - hypopharynx
- C. (i) - upper lip , (ii) - maxilla
- D. (i) - lower lip , (ii) - hypopharynx

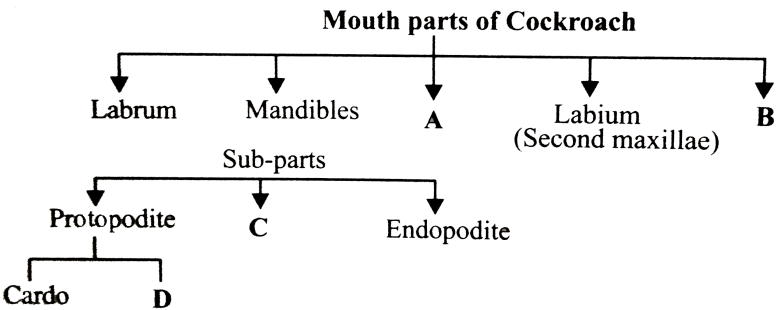
**Answer: D**



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69. Complete the following flowchart by selecting the correct option



- |    |                |             |             |                |
|----|----------------|-------------|-------------|----------------|
|    | A              | B           | C           | D              |
| A. | Stipes         | Hypopharynx | Exopodite   | First maxillae |
| B. | A              | B           | C           | D              |
|    | Stipes         | Exopodite   | Hypopharynx | First maxillae |
| C. | A              | B           | C           | D              |
|    | First maxillae | Hypopharynx | Exopodite   | Stipes         |
| D. | A              | B           | C           | D              |
|    | First maxillae | Exopodite   | Hypopharynx | Stipes         |

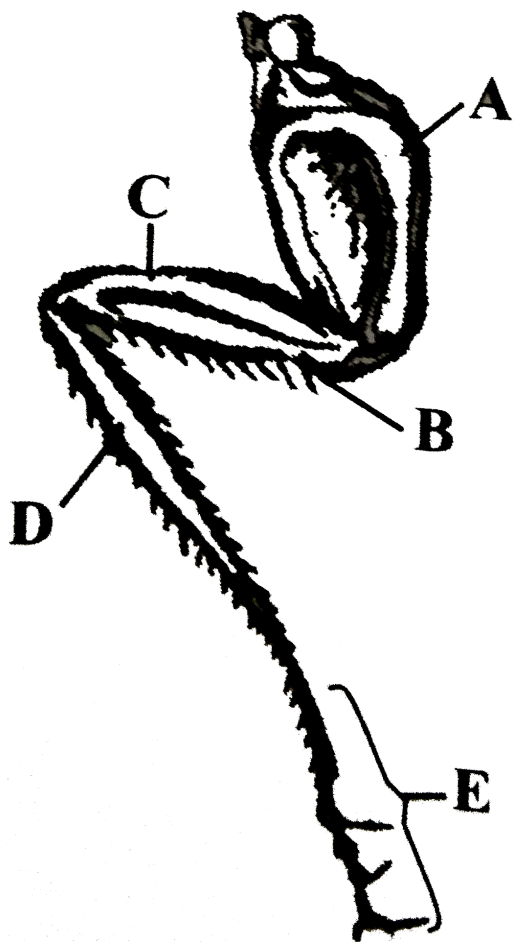
Answer: C



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70. In the given diagram of a leg of cockroach, parts have been indicated by alphabets. Select the answer in which these alphabets have been

correctly matched with the parts which they indicate



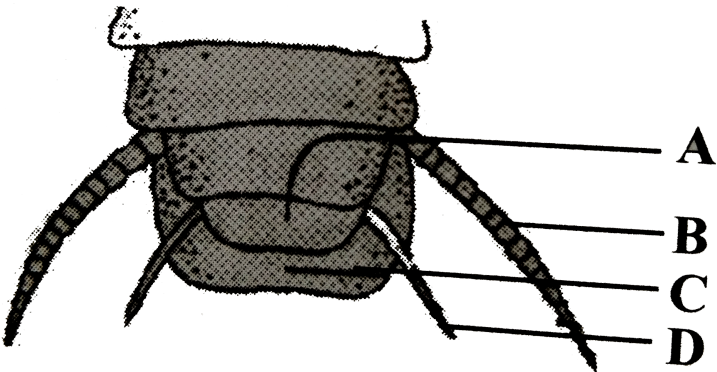
- |    |      |            |            |        |            |
|----|------|------------|------------|--------|------------|
|    | A    | B          | C          | D      | E          |
| A. | Coxa | Tibia      | Tarsus     | Femur  | Trochanter |
| B. | A    | B          | C          | D      | E          |
|    | Coxa | Femur      | Trochanter | Tarsus | Tibia      |
| C. | A    | B          | C          | D      | E          |
|    | Coxa | Tarsus     | femur      | Tibia  | Trochanter |
| D. | A    | B          | C          | D      | E          |
|    | Coxa | Trochanter | femur      | Tibia  | Tarsus     |

Answer: D



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71. The given figure represents posterior region of male cockroach. Identify the parts labelled as A,B,C and D



- |    |            |             |             |             |
|----|------------|-------------|-------------|-------------|
|    | A          | B           | C           | D           |
| A. | 9th stenum | Anal style  | 10th tergum | Anal circus |
|    | A          | B           | C           | D           |
| B. | Anal style | Anal circus | 10th tergum | 9th sternum |
|    | A          | B           | C           | D           |
| C. | 9th stenum | Anal circus | 10th tergum | Anal style  |
|    | A          | B           | C           | D           |
| D. | 9th tergum | Anal circus | 10th sterum | Anal style  |

Answer: C



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72. Male cockroach differs from female cockroach in having

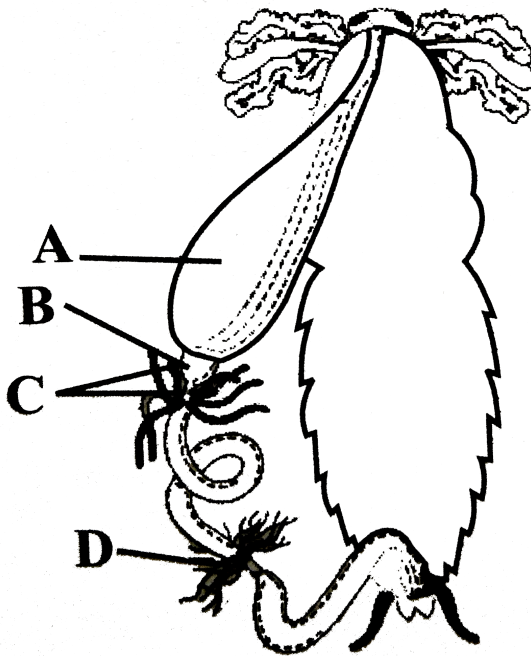
- A. antennae
- B. labrum
- C. maxillae
- D. anal styles

**Answer: D**



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73. The given figure shows alimentary canal of cockroach. Identify the parts labelled as A to D and select the correct option



- |    |         |         |                    |                    |
|----|---------|---------|--------------------|--------------------|
|    | A       | B       | C                  | D                  |
| A. | Gizzard | Crop    | Hepatic caecae     | Malpighian tubules |
| B. | Crop    | Gizzard | Hepatic caecae     | Malpighian tubules |
| C. | Crop    | Gizzard | Malpighian tubules | Hepatic caecae     |
| D. | Gizzard | Crop    | Malpighian tubules | Hepatic caecae     |

**Answer: B**



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74. Choose the incorrect pair from the matches given below.

A. Antennae - Sensory receptors

B. Metathoracic wings - Flying

C. Malpighian tubule - Excretion

D. Crop - Food grinding

**Answer: D**



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75. 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.	Malpighian tubules		hepatic caecae

	A		B
B.	fat bodies		vasa efferentia

- C.                    A                    B  
         hepatic caecae      Malpighian tubules
- D.                    A                    B  
         vas deferens      fat bodies

**Answer: C**



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**76.** Read the given paragraph

It is lined by glandular and ciliated cells. It absorbs nitrogenous waste products from haemocoel and convert them into uric acid which is excreted out through the hindgut

Which of the following structures of cockroach is referred here ?

- A. Trachea
- B. Hepatic caecum
- C. Tergum
- D. Malpighian tubule

**Answer: D**



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77. 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

**Answer: D**



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78. 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.

**Answer: B**



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**79.** 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

**Answer: B**



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**80.** Read the following statements about cockroach

(i) In male cockroach, a characteristic mushroom shaped gland is present in the 6<sup>th</sup> – 7<sup>th</sup> abdominal segments which functions as an accessory reproductive gland

Cockroach is uricotelic

(iii) The fat body and uricose glands are glandular in function

(iv) Blood from sinuses enter heart through ostia and is pumped anteriorly to sinuses again.

Which of the above statements are correct ?

A. (i), (ii) and (iv)

B. (ii) and (iii)

C. (i) and (iv)

D. (ii) and (iv)

**Answer: A**



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**81.** Which of the following statements is correct regarding cockroach ?

A. (a) It possesses ventral nerve cord

B. (b) Its spiracles help in excretion

C. (c) Phallomere is present in female cockroach

D. (d) Compound eye is also called as ocellus

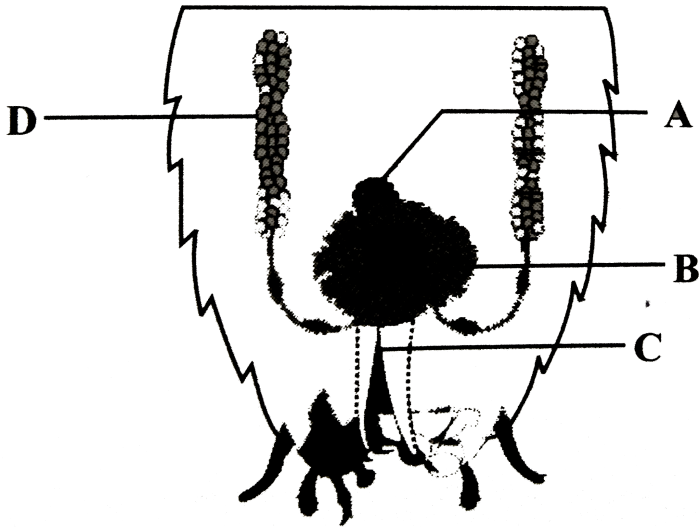
**Answer: A**



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82. Study the given figure of reproductive system of male cockroach

In which of the labelled parts are sperms stored ?



A. (a) A

B. (b) B

C. (c) C

D. (d) D

**Answer: B**



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**83.** In cockroach, the ootheca is formed by the secretion of

- A. (a) phallic gland
- B. (b) collateral gland
- C. (c) mushroom gland
- D. (d) conglobate gland

**Answer: B**



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**84.** The development of *Periplaneta americana* is

- A. (a) holometabolous
- B. (b) paurometabolous
- C. (c) ametabolous
- D. (d) hemimetabolous

**Answer: B**



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**85.** About how many times does the nymph of *Periplaneta americana* undergo moulting before becoming an adult ?

A. (a) 4

B. (b) 2

C. (c) 17

D. (d) 13

**Answer: D**



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**86.** Consider the following four statements (i) - (iv) and select the correct option stating which ones are true (T) and which ones are false (F)

(i) In male cockroach, genital pouch or chamber lies at the hind end of abdomen bounded dorsally by 9<sup>th</sup> and 10<sup>th</sup> terga and ventrally by the 9<sup>th</sup> sternum.

(ii) In cockroach, the haemolymph is composed of colourless plasma and haemocytes

(iii) In female cockroach each ovary is formed of a group of ten ovarian tubules or ovarioles, containing a chain of developing ova

(iv) In cockroach the nymph grows by moulting about 13 times to reach the adult form.

- |    |          |           |            |           |
|----|----------|-----------|------------|-----------|
| A. | (i)<br>F | (ii)<br>T | (iii)<br>F | (iv)<br>T |
| B. | (i)<br>F | (ii)<br>F | (iii)<br>T | (iv)<br>T |
| C. | (i)<br>T | (ii)<br>T | (iii)<br>F | (iv)<br>T |
| D. | (i)<br>T | (ii)<br>F | (iii)<br>T | (iv)<br>F |

**Answer: C**



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**87.** Which of the following statements is incorrect about the frog ?

- (i) Eyes are bulged out and covered by a nictitating membrane that protects them while in water
- (ii) On either side of the eyes a membranous tympanum (ear) receives sound signals
- (iii) The hind limbs end in four digits and they are largerr and muscular then force limbs that end in five digits
- (iv) Frogs exhibit sexual dimorphism.

A. (i) and (v)

B. (iii) only

C. (ii) and (iii)

D. (iv) only

**Answer: B**

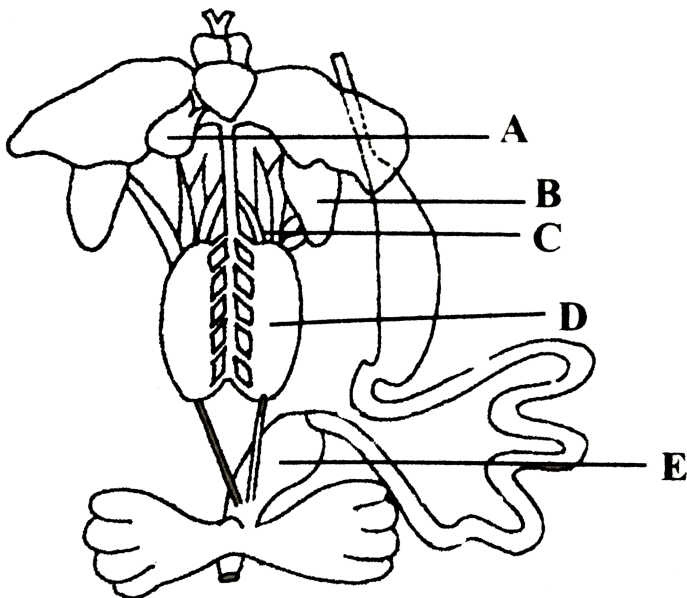


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**88.** The figure given here shows diagrammatic representation of internal organs of a frog

Identify A to E and select the correct option



A. (a)            A            B            C            D            E  
                  Gall bladder   Liver   Ovary   Testis   Rectum

B. (b)            A            B            C            D            E  
                  Liver   Pancrease   Fat bodies   Testis   Gall bladder

C. (c)            A            B            C            D            E  
                  Pancrease   Lung   Testis   Kidney   Liver

D. (d)            A            B            C            D            E  
                  Gall bladder   Lung   Fat bodies   Kidney   Rectum

**Answer: D**



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**89.** In a frog, if a hole is punched in the floor of its buccal cavity, then the frog will not die as

- A. buccal respiration does not stop
- B. pulmonary respiration occurs
- C. it can store oxygen for future use
- D. respiration other than lungs will continue

**Answer: B**



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**90.** Read the following statement (P - T) and select the option that correctly fills (i) - (v)

P. The male frog has a special organ on the throat called I

Q. ii membrane is a part of ear and serves to receive sound waves

R. Dermis of the frog contains sac-like iii glands

S. Tongue of frog is iv

T. v respiration takes place in lungs on land.

A. (a) (i) - vocal sac, (ii) - Plasma, (iii) - mucous, (iv) trilobed, (v)

Pulmonary

B. (b) (i) - vocal sac, (ii) - Tympanic , (iii) - mucous, (iv) bilobed, (v)

Pulmonary

C. (c) (i)-vocal sac, (ii) - Pleural, (iii) - mucous, (iv) unilobed, (v)

Pulmonary

D. (d) (i) - voacl sac, (ii) - incus, (iii) - sweat, (iv) multilobed, (v)

Pulmonary

**Answer: B**



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**91.** Which of the following statements is correct about the respiration in frog ?

- (i) In frog, cutaneous and pulmonary respiration are found
- (ii) A pair of elongated pink hollow lungs are found in thorax

During aestivation and hibernation, gaseous exchange takes place through skin.

A. (i),(ii) and (iii)

B. (i) and (iii)

C. (ii) and (iii)

D. (i) and (ii)

**Answer: A**



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**92.** Fill up the blanks in the following paragraph by selecting the correct option

The vascular system of frog is well-developed I type. The blood vascular system involves heart, blood vessels and blood. Heart has 3 chambers, two atria and one ventricle and is covered by a membrane called ii. A triangular structure called iii joins the right atrium.

- |        |        |                  |                  |
|--------|--------|------------------|------------------|
|        | (i)    | (ii)             | (iii)            |
| A. (a) | open   | conus arteriosus | neurilemma       |
|        | (i)    | (ii)             | (iii)            |
| B. (b) | closed | sinus venosus    | pericardium      |
|        | (i)    | (ii)             | (iii)            |
| C. (c) | open   | neurilemma       | conus arteriosus |
|        | (i)    | (ii)             | (iii)            |
| D. (d) | closed | pericardium      | sinus venosus    |

**Answer: D**



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**93.** Identify the incorrect statement about frog.

- A. (a) Parathyroid and pineal body are present
- B. (b) There are ten cranial nerves only
- C. (c) Optic lobes are situated in the mid brain

D. (d) The ventricle opens into the conus arteriosus

**Answer: B**



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**94.** The hind brain in a frog consists of

- A. (a) cerebellum
- B. (b) medulla oblongata
- C. (c) diencephalon
- D. (d) Both (a) and (b)

**Answer: D**



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**95.** In frog, mesorchium is a thin fold of of membrane extending between

- A. two testes
- B. liver and kidneys
- C. two kidneys
- D. kidneys and testes

**Answer: D**



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**96.** Following are given four statements (i)- (iv) related to frog. Read the statement carefully and select the option that identifies two correct statements.

- (i) The brain is divided into fore-brain, mid-brain and hind-brain
- (ii) Vasa efferentia enter the kidneys on their side and open into Bidder's canal
- (iii) Ear acts as a hearing organ only
- (iv) RBCs are enucleated and contain red coloured pigment namely haemoglobin

A. (ii) and (iii)

B. (i) and (ii)

C. (iii) and (iv)

D. (i) and (iv)

**Answer: B**



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**97.** Cloaca is a small, median chamber that is used to pass

A. faecal matter

B. urine

C. sperms

D. All of these

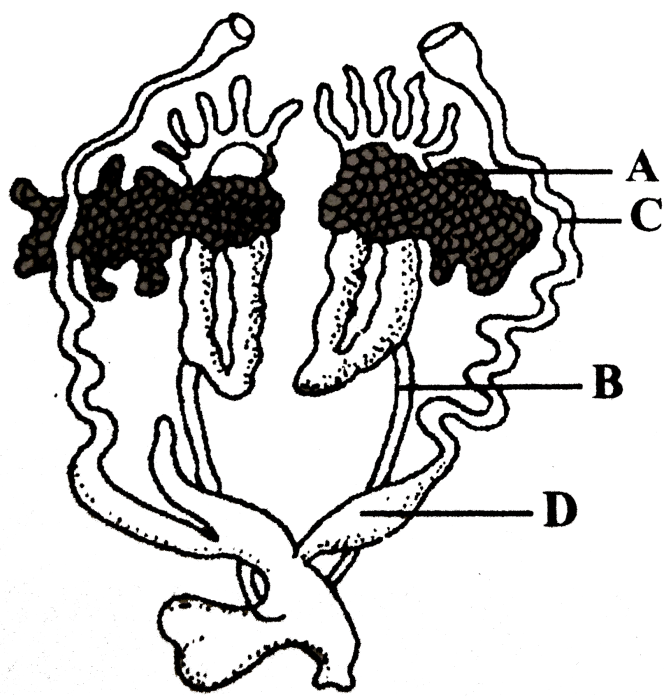
**Answer: D**



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98. The figure given here is related with female reproductive system of frog. Identify the parts labelled as A to D



- A. (a)

A	B	C	D
Ovary	Ureter	Oviduct	Ovisac
- B. (b)

A		B	C	D
Ovisac	Urinogenital duct	Bidder's canal	Ovary	
- C. (c)

A	B	C	D
Ovary	Urinogenital duct	Ovisac	Oviduct
- D. (d)

A	B	C	D
Ovisac	Urinogenital duct	Bidder's canal	Oviduct

**Answer: A**



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**99.** Read the statements regarding frog. Which of the statements is/are correct and incorrect ?

- (i) The medulla oblongata passes out through foramen of Monoro and continues into the spinal cord
- (ii) Vasa efferentia are 10-12 in number that arise from the testes
- (iii) Ovaries have no functional connection with kidneys
- (iv) Frogs are uricotelic

A. (a) Statements (i), (ii) and (iii) are correct while statement (iv) is incorrect

B. (b) Statement (i) and (ii) are correct while statements (iii) and (iv) are incorrect

C. (c) Statements (ii) and (iii) are correct while statements (i) and (iv) are incorrect

D. (d) Statement (ii), (iii) and (iv) are correct while statement (i) is incorrect

**Answer: C**



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**100.** Where is jelly deposited as a covering on the egg of frog ?

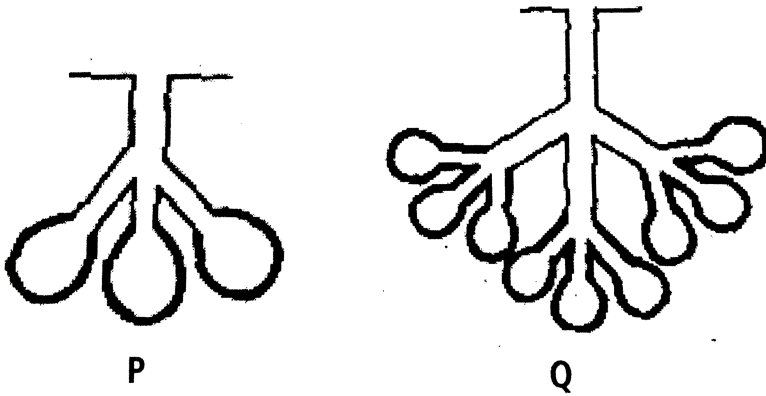
- A. In the oviduct
- B. In the water during fertilisation
- C. In the water after fertilisation
- D. In the ovary

**Answer: A**



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1. Refer to the given figures showing two types of glands



Which of the following statements regarding these glands is not correct ?

- A. These are the multicellular glands which pour their secretion directly through ducts at the site of action
- B. Sebaceous glands present in human skin are 'P' type of glands
- C. Brunner's glands of human intestine and sweat glands of human skin are 'Q' type of glands
- D. In 'P' type of glands, secretory portion is flask like structure where in 'Q' type of glands, secretory portion is both

tubular and flask shaped.

**Answer: C**



**Watch Video Solution**

2. Read of 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, 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)

**Answer: D**



**Watch Video Solution**

**3.** Enzyme collagenase breaks the peptide bonds present in collagen protein. Excessive secretion of this enzyme will lead to weakening of which of the following body parts ?

(i) Tendons

(ii) Bones

(iii) Hair shafts

(iv) Nails and claws

(v) Intervertebral discs

A. (i),(ii) and (iii)

B. (i),(ii) and (v)

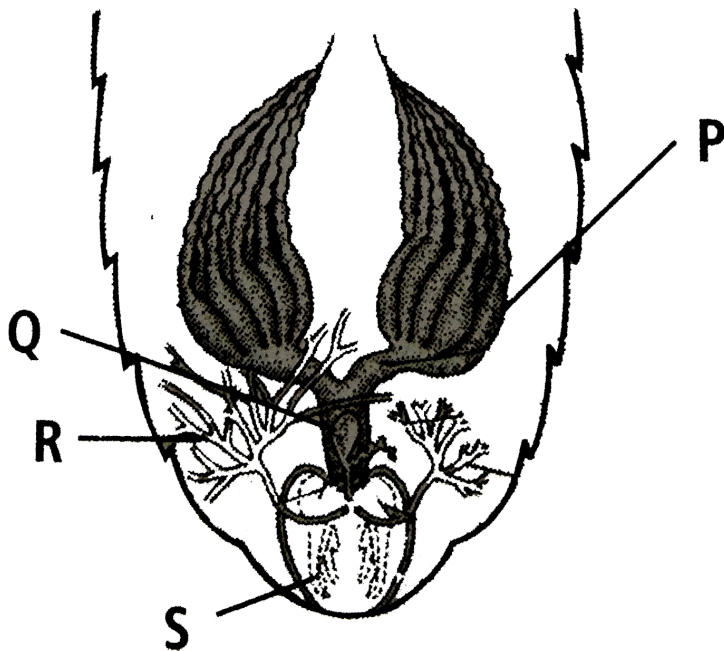
C. (iii) and (iv)

D. (ii),(iii) and (v)

**Answer: B**

 **Watch Video Solution**

4. Refer to the given figure showing reproductive system of female cockroach



Identify the parts labelled as P,Q R and S and select the correct statement regarding these

- A. P represents the ovary of female cockroach, while consists of six ovarioles, each containing a row of developing ova.
- B. Q represents the left spermatheca which stores the sperms received from male during copulation
- C. R represents the right conglobate gland whose secretions serve to attract the male cockroach during mating.
- D. S represents the gonapophyses whose secretion produces the egg case of ootheca.

**Answer: B**



**Watch Video Solution**

5. 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

**Answer: A**



**Watch Video Solution**

## Exemplar

1. Which one of the following types of cell is involved in making of the inner walls of large blood vessels ?

- A. Cuboidal epithelium
- B. columnar epithelium
- C. Squamous epithelium
- D. Stratified epithelium

**Answer: C**



**Watch Video Solution**

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

- A. Epithelial
- B. Connective
- C. Muscular
- D. Neutral

**Answer: B**



**Watch Video Solution**

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

- A. Bone
- B. Cartilage
- C. Blood
- D. Muscles

**Answer: D**



**Watch Video Solution**

4. Setae help in locomotion in earthworm but are not uniformly present in all the segments. They are present in

- A. 1<sup>st</sup> segment
- B. last segment
- C. Clitellar segment

D. 20<sup>th</sup> – 22<sup>nd</sup> segment

**Answer: D**



**Watch Video Solution**

5. Which one of the following statement is true for cockroach ?

- A. The number of ovarioles in each ovary are ten
- B. The larval stage is called caterpillar
- C. Anal styles are absent in females
- D. They are ureotelic

**Answer: C**



**Watch Video Solution**

**6. Match the following and choose the correct option**

- |                            |       |             |
|----------------------------|-------|-------------|
| A. Adipose tissue          | (i)   | Nose        |
| B. Stratified epithelium   | (ii)  | Blood       |
| C. Hyaline cartilage       | (iii) | Skin        |
| D. Fluid connective tissue | (iv)  | Fat storage |

A. A-(i),B-(ii),C-(iii),D-(iv)

B. A-(iv),B-(iii),C-(i),D-(ii)

C. A-(iii),B-(i),C-(iv),D-(ii)

D. A-(ii),B-(i),C-(iv),D-(iii)

**Answer: B**



**Watch Video Solution**

**7. 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)

**Answer: A**



**Watch Video Solution**

**8. 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)

**Answer: B**



**Watch Video Solution**

**9. Match the following and choose the correct answer**

- |                      |                                |
|----------------------|--------------------------------|
| A. Touch             | (i) Nasal epithelium           |
| B. Smell             | (ii) Foramen magnum            |
| C. Cranial nerves    | (iii) Sensory papillae         |
| D. Medulla oblongata | (iv) Peripheral nervous system |

A. A-(iii),B-(i),C-(ii),D-(iv)

B. A-(ii),B-(i),C-(iv),D-(iii)

C. A-(iii),B-(iv),C-(ii),D-(i)

D. A-(iii),B-(i),C-(iv),D-(ii)

**Answer: D**



**Watch Video Solution**

1. Assertion : Stomach and intestine of our body has columnar epithelium

Reason : Columnar epithelium helps in secretion and absorption.

- 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

**Answer: A**



**Watch Video Solution**

2. 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

- 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

**Answer: C**



**Watch Video Solution**

**3. Assertion :** Connective tissues are the most abundant and widely distributed in the body of complex animals

**Reason :** Connective tissues link and support other tissues or organs of the body.

- 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

**Answer: A**



**Watch Video Solution**

**4. 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

**Answer: A**



**Watch Video Solution**

**5. Assertion :** Tendons attach one bone to another bone

**Reason :** Ligaments attach skeletal muscles to bones.

- 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

**Answer: D**



**Watch Video Solution**

**6. 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

**Answer: A**



**Watch Video Solution**

7. Assertion : Neurons protect and support the neuroglial cells

Reason : Neuroglial cells make up ninety per cent neural tissue in our body.

- 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

**Answer: D**



**Watch Video Solution**

8. Assertion : Setae are absent in clitellum

Reason : Setae help in locomotion.

- 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

**Answer: B**



**Watch Video Solution**

**9. 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

**Answer: C**



**Watch Video Solution**

**10.** Assertion : Earthworm are known are known as friends of farmers

Reason : Earthworms make burrows in the soil and make the soil porous, which helps in repiration 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

**Answer: A**



**Watch Video Solution**

**11. 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

**Answer: C**



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**12.** Assertion : Eggs of cockroach are encased in capsules called oothecae

Reason : Ootheca is a dark reddish to blackish brown capsule.

- 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

**Answer: B**



**Watch Video Solution**

**13.** 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

**Answer: C**



**Watch Video Solution**

**14. 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

**Answer: A**



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**15. Assertion :** There is hepatic portal system in frog

**Reason :** It is venous connection between liver and intestine in frog.

- 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

**Answer: B**



**Watch Video Solution**

## Structural Organisation In Animals

1. Simple cuboidal epithelium lines all the following structures except the

A. ovary

B. pancreatic ducts

C. thyroid follicles

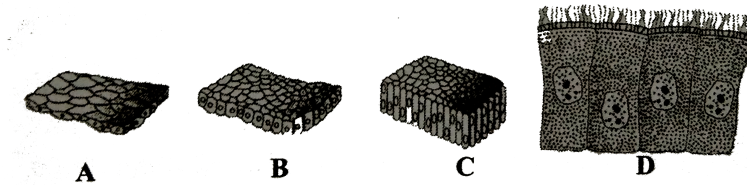
D. Fallopian tube

**Answer: D**



**Watch Video Solution**

2. Identify the following simple epithelial tissues and select the correct option



- |    | A        | B        | C        | D                                      |
|----|----------|----------|----------|----------------------------------------|
| A. | Cuboidal | Squamous | Columnar | Ciliated<br>columnar                   |
| B. | Squamous | Cuboidal | Columnar | Ciliated<br>columnar                   |
| C. | Squamous | Columnar | Cuboidal | Ciliated<br>cuboidal                   |
| D. | Squamous | Columnar | Cuboidal | Pseudostratified<br>columnar(ciliated) |

**Answer: B**



**Watch Video Solution**

3. Lining of intestine of man is

- A. brush bordered

B. ciliated

C. non-keratinised

D. keratinised

**Answer: A**



**Watch Video Solution**

**4.** 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)

**Answer: B**



**Watch Video Solution**

5. The type of epithelial cells which line the inner surface of Fallopian tubes, bronchioles and small bronchi are known as

A. squamous epithelium

B. columnar epithelium

C. ciliated epithelium

D. cubical epithelium

**Answer: C**



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6. Pick the odd one in each series and select the correct option

(i) Areolar tissue, blood, neuron, tendon

(ii) Salivary gland, gastric gland, tear gland, thyroid gland

(iii) Adrenal gland, sweat gland, milk gland, oil gland

A.            (i)                      (ii)                      (iii)  
Areolar tissue    Gastric gland    Milk gland

B.            (i)                      (ii)                      (iii)  
Blood            Tear gland            Oil gland

C.            (i)                      (ii)                      (iii)  
Tendon            Salivary gland            Sweat gland

D.            (i)                      (ii)                      (iii)  
Neuron            Thyroid gland            Adrenal gland

**Answer: D**



**Watch Video Solution**

7. Pseudostratified epithelium is found in

A. rectum



- B. urinary bladder
- C. wall of oesophagus
- D. inner lining of bronchiole

**Answer: D**



**Watch Video Solution**

**8. Read the following statement and select the correct option**

Statement 1 : Urinary bladder is lined by transitional epithelium

Statement 2 : Transitional epithelium keeps the size of bladder constant at all time.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: B**



**Watch Video Solution**

**9.** The cell junctions namely tight, adhering and gap junctions are found in

- A. connective tissues
- B. epithelial tissues
- C. neural tissues
- D. muscular tissues

**Answer: B**



**Watch Video Solution**

**10.** 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 junction 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)

**Answer: D**



**Watch Video Solution**

**11.** Blood brain barrier in adults have \_\_\_\_\_ junctions between cells

- A. tight
- B. adhering
- C. gap
- D. none of these

**Answer: A**



**Watch Video Solution**

**12.** 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

**Answer: A**



13. Which of the following statements is/are not correct regarding connective tissues ?

- (i) They are most abundant and widely distributed in the body of complex animals
- (ii) They connect and support other tissues
- (iii) They include diverse tissues such as bones, cartilage, tendons, adipose and other loose connective tissues.
- (iv) They form the internal and external lining of many organs
- (v) In all connective tissues except blood, the cells secrete fibres of structural proteins like collagen and elastin.

A. (iv) only

B. (v) only

C. (i) and (ii)

D. (iii) and (v)

**Answer: A**



**Watch Video Solution**

**14.** Areolar connective tissue joins

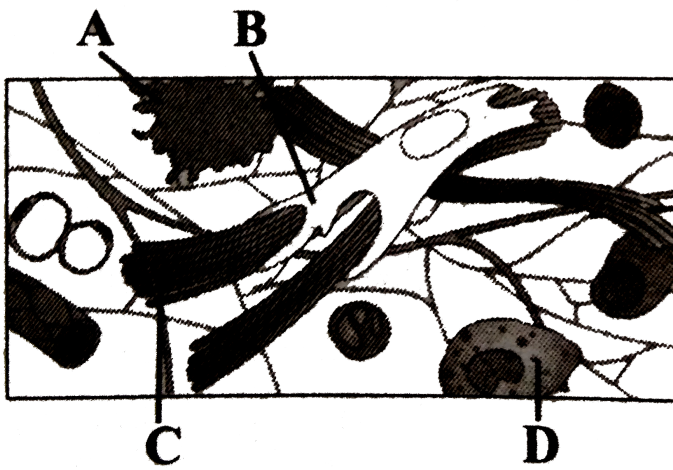
- A. bone with bone
- B. fat body with muscles
- C. integument with muscles
- D. bone with muscles

**Answer: C**



**Watch Video Solution**

**15.** 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          | B              | C               | D              |
| A. | Macrophage | Fibroblast     | Collagen fibres | Mast cell      |
|    | A          | B              | C               | D              |
| B. | Mast cell  | Macrophage     | Fibroblast      | Collagen fibre |
|    | A          | B              | C               | D              |
| C. | Macrophage | Collagen fibre | Fibroblast      | Mast cell      |
|    | A          | B              | C               | D              |
| D. | Mast cell  | Collagen fibre | Fibroblast      | Macrophage     |

**Answer: A**



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**16.** Which one of the following contains the largest quantity of extracellular material ?

- A. Striated muscle
- B. Areolar tissue
- C. Stratified epithelium
- D. Myelinated nerve fibres

**Answer: B**



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**17.** Consider the following statement (i)-(iii) and select the correct option stating which ones are true (T) and which one are false (F)

(i) Keratinised stratified squamous epithelium covers moist surfaces like buccal cavity

(ii) Fibroblasts store fat in adipose tissue

(iii) Urinary bladder is lined by a stratified epithelium.

- |    |     |      |       |
|----|-----|------|-------|
|    | (i) | (ii) | (iii) |
| A. | F   | T    | T     |
|    | (i) | (ii) | (iii) |
| B. | T   | F    | F     |



- |    |     |      |       |
|----|-----|------|-------|
|    | (i) | (ii) | (iii) |
| C. | T   | F    | T     |
| D. | (i) | (ii) | (iii) |
|    | T   | T    | F     |

**Answer: B**



**View Text Solution**

**18.** Bone is connected to muscles with the help of

- A. ligament
- B. cartilage
- C. tendon
- D. none of these

**Answer: C**



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19. Given below are four statement (i) - (iv) each with two blanks. Select the option which correctly fills up the blanks in any two of these statements

(i) The columnar epithelium is composed of 1 and slender cells. Their 2 are located at the base

(ii) Collagen fibres provide 3 and elastin fibres provide 4 and elasticity to the tissue

(iii) Adipose tissue is a 5 type of connective tissue located mainly beneath 6

(iv) Tendons attach 7 to bones and ligaments attach 8 to bones.

A. (1) tall, (2) nuclei, (7) bones, (8) muscles

B. (1) short, (2) organelles, (3) strength, (4) flexibility

C. (3) strength, (4) flexibility, (5) loose, (6) skin

D. (5) dense, (6) muscles, (7) muscles, (8) bones

**Answer: C**



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**20.** Cartilage is formed by

- A. chondrocytes
- B. osteoblasts
- C. osteoclasts
- D. fibroblasts

**Answer: A**



**Watch Video Solution**

**21.** Read the following statements and select the correct ones

In simple cuboidal epithelium, nuclei are rounded and lie in the centre of the cells

(ii) None-keratinised epithelium is impermeable to water

(iii) Yellow elastic fibrocartilage makes cartilage flexible

(iv) Areolar tissue forms a shock absorbing cushion around the eye balls and kidneys.

- A. (i) and (iii)
- B. (i) and (ii)
- C. (iii) and (iv)
- D. (ii) and (iv)

**Answer: A**



**Watch Video Solution**

**22.** Which of the following is a transparent tissue ?

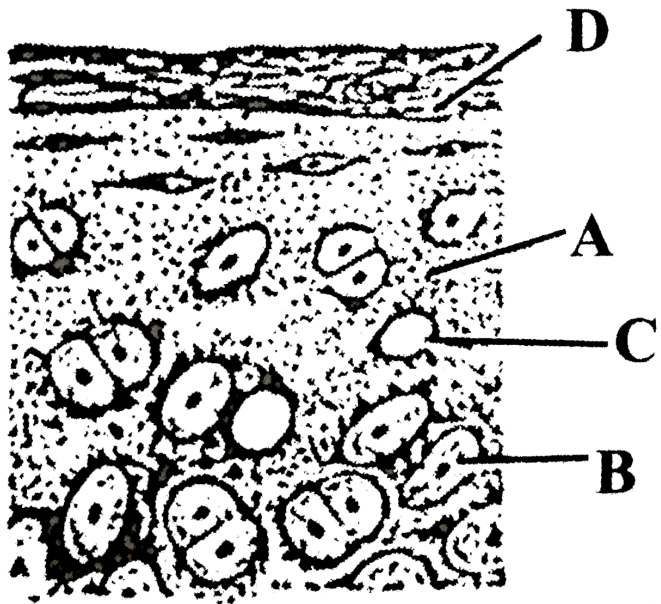
- A. Tendon
- B. Fibrous cartilage
- C. Hyaline cartilage
- D. All of these

Answer: C



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23. 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             | B           | C      | D               |
| A. | Perichondrium | Chondrocyte | Lacuna | Capsular matrix |
| B. | A             | B           | C      | D               |
|    | Blood vessel  | Chondrocyte | Lacuna | Perichondrium   |

	A	B	C	D
C.	Matrix	Chondrocyte	Lacuna	Perichondrium
	A	B	C	D
D.	Matrix	Lacuna	Chondrocyte	Capsular matrix

**Answer: C**



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

Column I		Column II
A. Hyaline cartilage	(i)	Pectoral girdle of frog
B. Fibrous cartilage	(ii)	Long bones, sternum, ribs
C. Elastic cartilage	(iii)	Pubic symphysis
D. Calcified cartilage	(iv)	Eustachian tube, epiglottis

A. A-(i),B-(ii),C-(iii),D-(iv)

B. A-(ii),B-(iii),C-(iv),D-(i)

C. A-(ii),B-(ic),C-(iii),D-(i)

D. A-(iv),B-(iii),C-(ii),D-(i)

**Answer: B**



25. Consider the following statements (i) - (iii), each with one or two blanks

(i) Bones have a hard and non-pliable ground substance rich in 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 fills 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

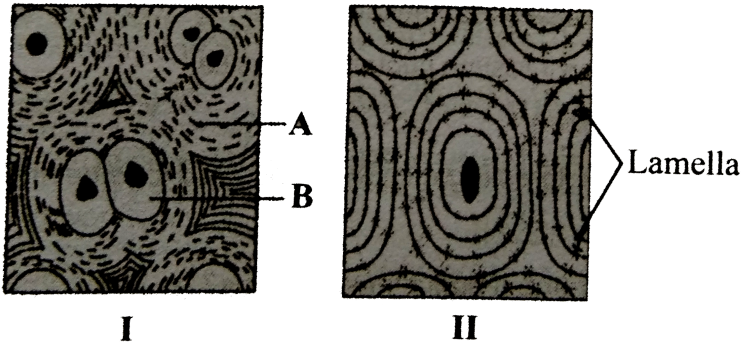
C. (3)-glandular, (4)-Adhering

D. (1)-magnesium salts, (2)-elastic fibres, (3)-compound

**Answer: A**

26. Given figures (*I* and *II*) show two specialised connective tissues.

Identify the figures *I*, *II* and the parts labelled as A and B



- |    |           |           |                 |              |
|----|-----------|-----------|-----------------|--------------|
|    | I         | II        | A               | B            |
| A. | Cartilage | Bone      | Collagen fibres | Chondrocyte  |
|    | I         | II        | A               | B            |
| B. | Cartilage | Bone      | Collagen fibres | Chondroclast |
|    | I         | II        | A               | B            |
| C. | Bone      | Cartilage | Microtubules    | Osteoblast   |
|    | I         | II        | A               | B            |
| D. | Bone      | Cartilage | Collagen fibres | Osteoblast   |

**Answer: A**



27. Consider the following statements (i) - (iii), each with two blanks

(i) Pseudostratified epithelium lines the 1 tract while transitional epithelium lines the 2 tract

(ii) Lacunae of bones house 3 while lacunae of cartilage contain 4

(iii) Tendon contain bundles of 5 fibres and rows of 6 cells between the them

Which one of the following options, gives the correct fill ups for the respective blank numbers from (1) to (6) in the statements ?

A. (1)-respiratory, (2)-urinary, (5)-white, (6)-fibroblast

B. (1)-urinary, (2)-respiratory, (3)-osteocytes, (4)-chondrocytes

C. (3)-chondrocytes, (4)-osteocytes, (5)-yellow, (6)-fibroblast

D. (1)-respiratory, (2)-urinary, (3)-chondrocytes, (4)-osteocytes

**Answer: A**



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**28.** Mammalian bone differs from cartilage in the presence of

- A. lymph vessels
- B. collagen
- C. blood vessels
- D. Haversian canals

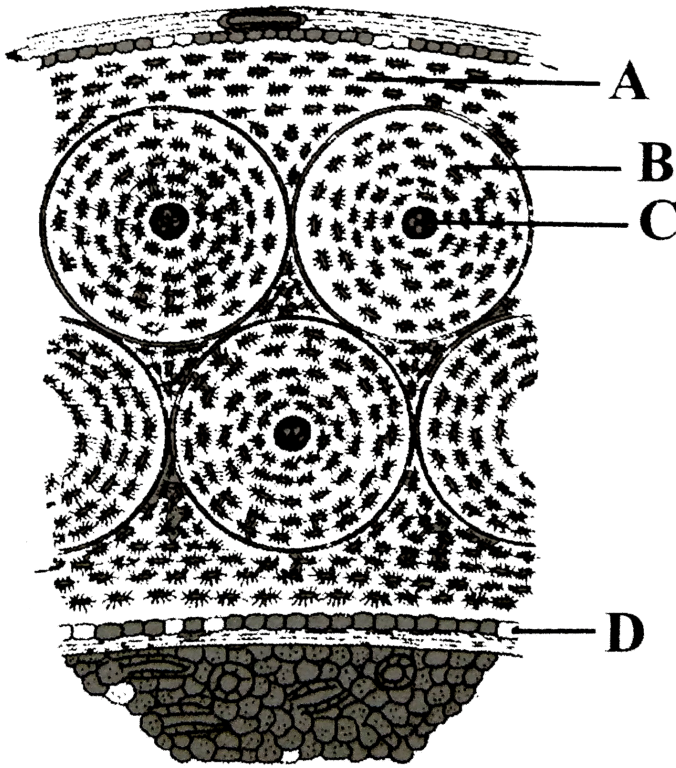
**Answer: D**



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**29.** In the given diagram is a section of bone tissue, certain parts have been indicated by alphabets. Select the answer in which these alphabets

have been correctly matched with the parts which they indicate



A. A-Interstitial lamellae,B-Nerve, C-Canaliculi,D-Haversian canal

B. A-Interstitial lamellae, B-Osteocytes, C-Haversian canal,D-Canaliculi

C. A-Interstitial lamellae, B-Osteocytes, C-Nerve, D-Blood vessels

D. A-Interstitial lamellae, B-Osteocytes,C-Haversian canal,D-Endosteum

**Answer: D**



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**30.** Read the following statement and select the correct option

Statement 1 : Bone and cartilage are rigid connective tissues

Statement 2 : Blood is a connective tissue with fluid (plasma) matrix.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: A**

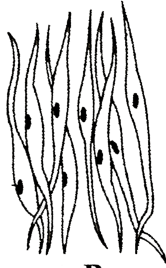


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**31.** Identify the figures A,B,C showing different types of muscle and select the correct option



**A**



**B**



**C**

- |    |                    |                  |                 |
|----|--------------------|------------------|-----------------|
|    | A                  | B                | C               |
| A. | Smooth muscle      | Striated muscle  | Cardiac muscle  |
|    | A                  | B                | C               |
| B. | Cardiac muscle     | Smooth muscle    | Striated muscle |
|    | A                  | B                | C               |
| C. | Striated muscle    | Smooth muscle    | Cardiac muscle  |
|    | A                  | B                | C               |
| D. | Involuntary muscle | Voluntary muscle | Heart muscle    |

**Answer: C**



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**32.** Match column *I* with column *II* and select the correct option from the code given below.

Column I	Column II
A. Pseudostratified epithelium	(i) Connective tissue
B. Matrix	(ii) absorption
C. Striated myofibril	(iii) Trachea
D. Mesothelium	(iv) Body cavity lining
E. Microvilli	(v) Multinucleate

A. A-(i),B-(ii),C-(iii),D-(iv),E-(v)

B. A-(ii),B-(v),C-(iv),D-(i),E-(iii)

C. A-(iii),B-(i),C-(v),D-(iv),E-(ii)

D. A-(iv),B-(iii),C-(v),D-(i),E-(ii)

**Answer: C**



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**33. Which of the following is a wrongly matched pair ?**

A. Unicellular glandular cells - Goblet cell

B. Saliva - Exocrine secretion

C. Fusiform fibres - Smooth muscle

## D. Cartilage - Areolar tissue

**Answer: D**



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**34.** Consider the following four statements (i) - (iv) and select the correct option stating which ones are true (T) and which ones are false (F)

(i) The epithelium of proximal convoluted tubule (PCT) of nephron in the kidney has microvilli

(ii) Simple epithelium covers the dry surface of the skin, the moist surface of buccal cavity, pharynx, inner lining of salivary glands and of pancreatic ducts

(iii) The wall of internal organs such as the blood vessels, stomach and intestine contains skeletal muscle

(iv) Bone marrow in some bones is the site of production of blood cells.

- |    |          |           |            |           |
|----|----------|-----------|------------|-----------|
| A. | (i)<br>T | (ii)<br>F | (iii)<br>F | (iv)<br>T |
| B. | (i)<br>F | (ii)<br>F | (iii)<br>T | (iv)<br>T |

- |    |     |      |       |      |
|----|-----|------|-------|------|
|    | (i) | (ii) | (iii) | (iv) |
| C. | T   | T    | F     | F    |
|    | (i) | (ii) | (iii) | (iv) |
| D. | T   | F    | T     | F    |

**Answer: A**



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**35.** Read the following four statement (i) - (iv) having certain mistakes in two of them.

(i) Adipose tissue is a type of dense connective tissue located beneath the skin

(ii) Compound epithelium has extensive role in absorption and secretion

(iii) Most of the cartilages in vertebrate embryos are replaced by bones in adults

(iv) Smooth muscles are involuntary as their functioning cannot be directly controlled

Which of the above statements have mistakes ?

A. (ii) and (iii)



B. (iii) and (iv)

C. (i) and (iii)

D. (i) and (ii)

**Answer: D**



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**36.** 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, the |
|                      | (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)

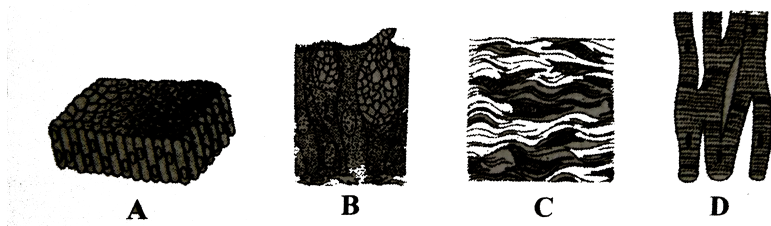
D. A-(iii),B-(i),C-(iv),D-(ii)

Answer: D



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37. The four figures (A, B, C and D) given below represent four different types of animal tissues. Which one of these is correctly identified in the given options along with its correct location and function ?



- |    |                        |           |                          |
|----|------------------------|-----------|--------------------------|
|    | Tissue                 | Location  | Function                 |
| A. | B-Glandular epithelium | Intestine | secretion                |
|    | Tissue                 | Location  | Function                 |
| B. | C-Collagen fibres      | Cartilage | Attach bone to bone      |
|    | Tissue                 | Location  | Function                 |
| C. | D-Smooth muscle tissue | Heart     | Heart contraction        |
| D. |                        |           |                          |
|    | Tissue                 | Location  | Function                 |
|    | A-Columnar epithelium  | Nephron   | secretion and absorption |

**Answer: A**



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**38.** Read the following statement and select the correct option

Statement 1 : Cardiac muscle of the heart is striated and has intercalated discs between its fibres (cells)

Statement 2 : It provides quick, powerful and rhythmic contractions to the heart.

- A. Both statement 1 and 2 correct
- B. statement 1 is correct but statement 2 is incorrect
- C. statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect

**Answer: A**



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**39.** Which one of the following is correct pairing of a body part with the kind of muscle tissue present in it ?

- A. Biceps of upper arm - Smooth muscle fibres
- B. Abdominal wall - Voluntary smooth muscle
- C. Iris - Involuntary smooth muscle
- D. Heart wall - Involuntary unstriated muscle

**Answer: C**



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**40.** Cardiac muscle cells differ from striated muscle cells in having

- A. a centrally located nucleus
- B. different myofibrils
- C. fewer mitochondria
- D. no sarcoplasmic reticulum

**Answer: A**



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**41.** Cardiac muscles are different from skeletal muscles as they are

A. smooth

B. voluntary

C. non-striated

D. involuntary

**Answer: D**



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**42.** Read the following statements and select the correct option

(i) Blood cells secrete fibres of structural proteins called collagen and elastin

- (ii) Neuroglial cells protect and support the nephrons
- (iii) Osteocytes are present in spaces called lacunae
- (iv) Striated muscle fibres are bundled together in a parallel fashion
- (v) Biceps are involuntary and striated.

- A. Statements (iii) and (iv) are incorrect
- B. Statement (ii) and (iv) are incorrect
- C. Statement (i) and (iii) are incorrect
- D. Statements (i),(ii) and (v) are incorrect.

**Answer: D**



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**43.** Which of the following cells do not form layer and remain structurally separate ?

- A. Epithelial cells
- B. Muscle cells

C. Nerve cells

D. Gland cells

**Answer: C**



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**44.** 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 nervous 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

**Answer: C**



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**45.** Nerve cell do not divide because they do not have

A. nucleus

B. centrosome

C. Golgi body

D. mitochondria

**Answer: B**



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**46.** Earthworms have no skeleton but during burrowing, the anterior end becomes turgid and acts as a hydraulic skeleton. It is due to

- A. gut peristalsis
- B. setae
- C. coelomic fluid
- D. blood

**Answer: C**



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**47.** Which of the following layers you will find in the body wall of earthworm (from outside to inside) ?

- A. Non-cellular cuticle, epidermis, circular muscles, longitudinal muscles, coelomic epithelium

B. Cuticle, epidermis, longitudinal muscles, circular muscles, coelomic epithelium

C. Non-cellular cuticle, epidermis, coelomic epithelium, circular muscles, longitudinal muscles

D. Cuticle, epidermis, peritoneal muscles

**Answer: A**



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**48.** Pheretima and its close relatives derive nourishment from

A. sugarcane roots

B. decaying fallen leaves and soil organic matter

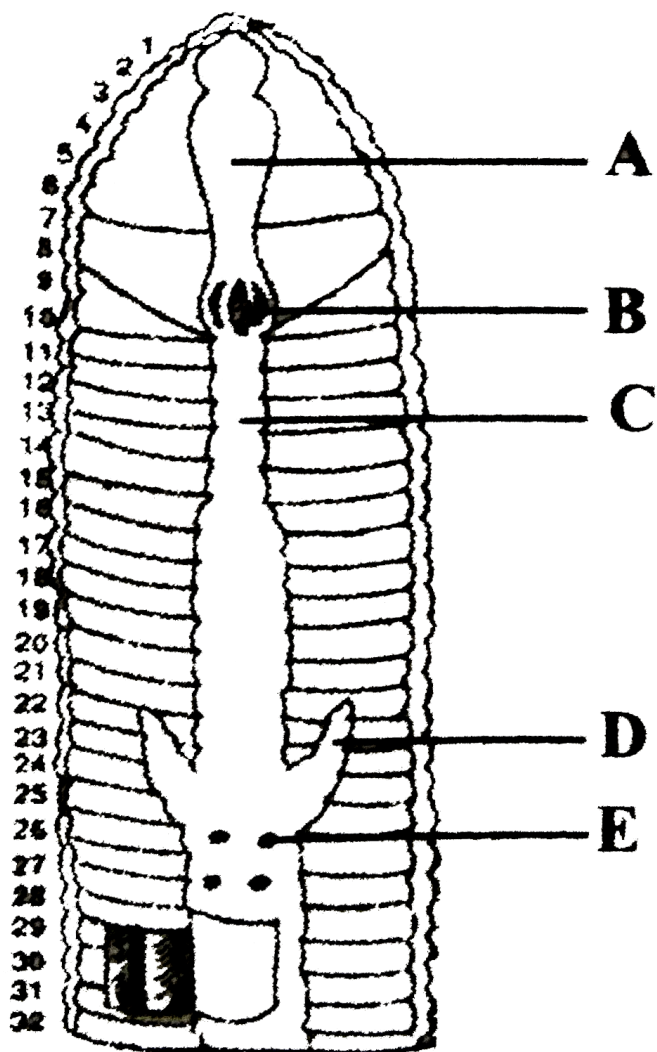
C. soil insects

D. small pieces of fresh fallen leaves of maize etc

**Answer: B**



49. Given is the figure of alimentary canal of earthworm. Select the option that correctly identifies the parts labelled as A to E



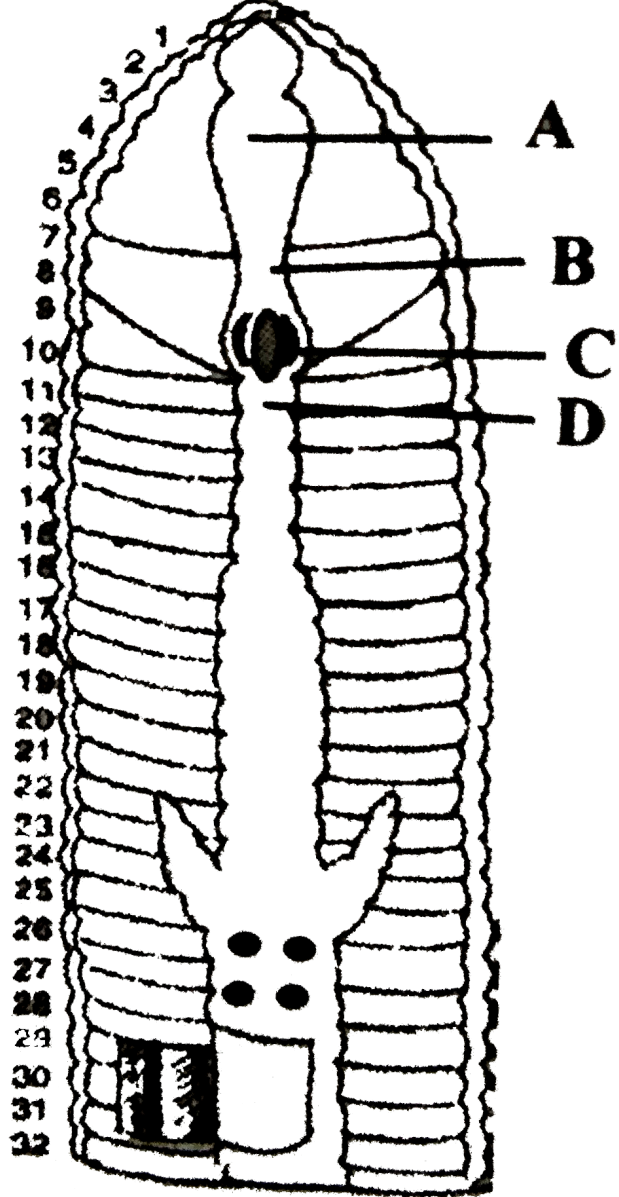
	A	B	C	D	E
A.	Pharynx	Stomach	Caecum	Gizzard	Lymph gland
	A	B	C	D	E
B.	Gizzard	Pharynx	Stomach	Caecum	Lymph gland
	A	B	C	D	E
C.	Pharynx	Gizzard	Stomach	Caecum	Lymph gland
	A	B	C	D	E
D.	Gizzard	Pharynx	Liver	Stomach	Villi

**Answer: C**



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**50.** Which part of the alimentary canal of earthworm (in the given figure) helps in grinding the soil particles ?



A. A

B. B

C. C

D. D

**Answer: C**



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**51.** 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

**Answer: B**



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

Column I (Parts of alimentary canal of earthworm)		Column II (Respective segments)	
A. Buccal cavity	(i)	1-3	
B. Pharynx	(ii)	3-4	
C. Oesophagus	(iii)	5-7	
D. Gizzard	(iv)	8-9	
E. Stomach	(v)	9-14	
F. Intestine	(vi)	15 to last	
G. Typhlosole	(vii)	26-35	

A. A-(i),B-(ii),C-(iii),D-(iv),E-(v),F-(vi),G-(vii)

B. A-(i),B-(ii),C-(iii),D-(v),E-(iv),F-(vi),G-(vii)

C. A-(i),B-(iii),C-(ii),D-(iv),E-(v),F-(vii),G-(vi)

D. A-(i),B-(iii),C-(ii),D-(v),E-(iv),F-(vii),G-(vi)

**Answer: A**



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53. Which of the following is absent in the coelomic fluid of earthworm ?

- A. Salts
- B. Haemoglobin
- C. Corpuscles
- D. Proteins

**Answer: B**



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**54.** The lateral hearts in earthworm

- A. are situated in segments 7 and 9
- B. are situated in segments 6 and 8
- C. are situated in segments 8 and 10
- D. are situated in segments 6 and 11

**Answer: A**



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55. Blood vessels in Pheretima, which have valves are

- A. dorsal
- B. ventral
- C. supra-oesophageal
- D. lateral oesophageal

**Answer: A**



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56. 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

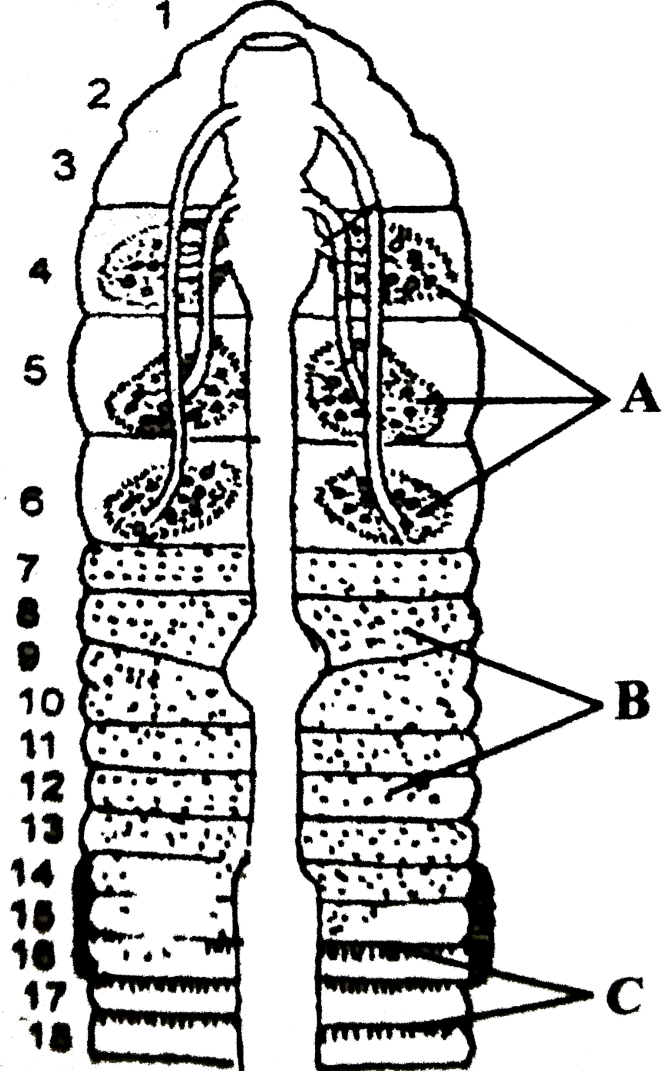
D. leucocyte production

**Answer: D**



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**57.** The figure showing nephridial system of earthworm is given here. Identify the types of nephridia labelled as A, B and C from the list (i) to (iii) given below and select the correct option



(i) Septal nephridia

(ii) Integumentary nephridia

(iii) Tufts of pharyngeal nephridia

A.    A        B        C  
       (ii)    (i)    (iii)

B.    A        B        C  
       (iii)   (ii)   (i)

- |    |      |       |       |
|----|------|-------|-------|
|    | A    | B     | C     |
| C. | (ii) | (iii) | (i)   |
|    | A    | B     | C     |
| D. | (i)  | (ii)  | (iii) |

**Answer: B**



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**58.** Which of the following statements is correct about excretion in earthworm ?

- (i) Earthworm is mainly ureotelic
- (ii) Septal nephridia, present on both sides of intersegmental septa of segment 15 to the last open into intestine
- (iii) Integumentary nephridia, attached to lining of body wall of segment 3 to the last, open on the body surface
- (iv) Different types of nephridia are basically similar in structure
- (v) Nephridia regulate the volume and composition of body fluids.

A. (i) and (iv)

B. (iv) and (v)

C. (i),(ii),(iii)

D. All of these

**Answer: D**



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**59.** Primary function of enteronephric nephridia of Pheretima is

A. osmoregulation

B. excretion of nitrogenous wastes

C. respiration

D. locomotion

**Answer: B**



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**60.** 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

**Answer: D**



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**61.** Which of the following structures is correctly matched with its description ?

- A. Septal nephridia and - 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

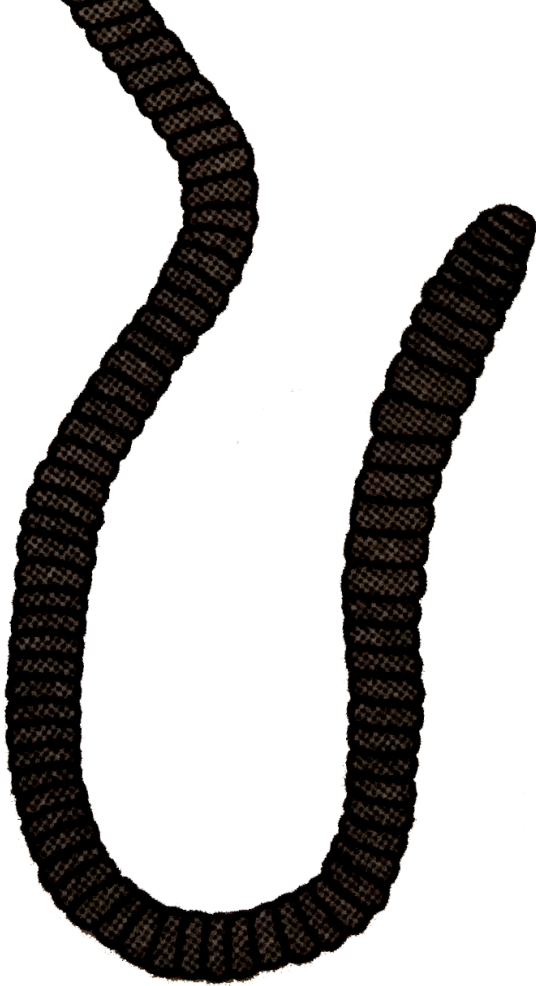
**Answer: C**



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**62. Which of the following is incorrect for Pheretima ?**





- A. Genital papillae are present on 17<sup>th</sup> and 19<sup>th</sup> segment
- B. Male genital pores are present on 18<sup>th</sup> segment
- C. Clitellum is present on segments 24, 25 and 26
- D. Segments of earthworm are called somites.

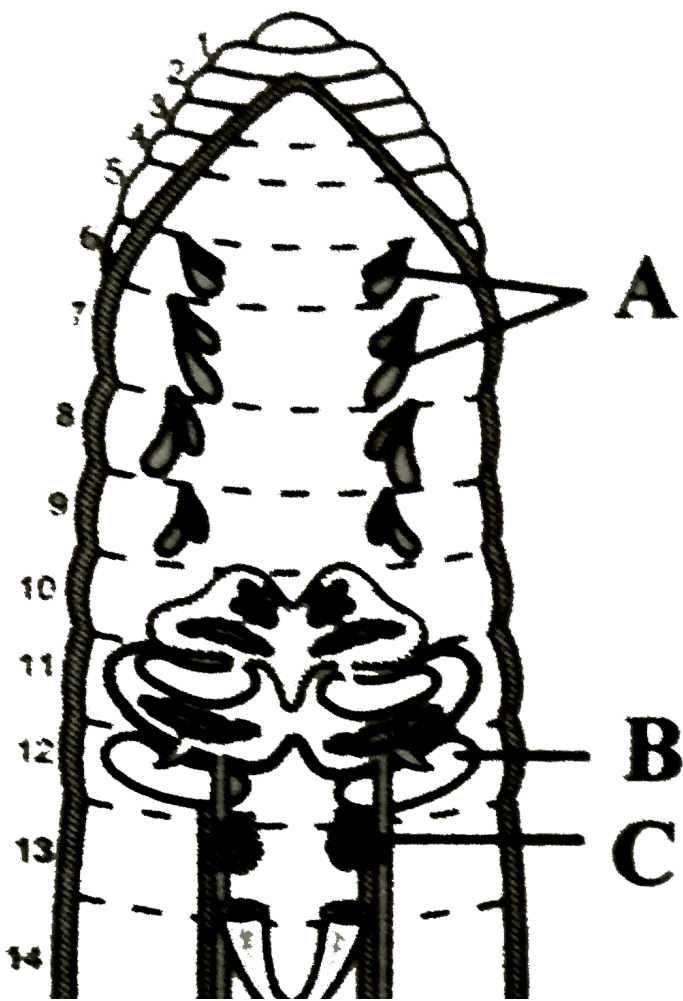


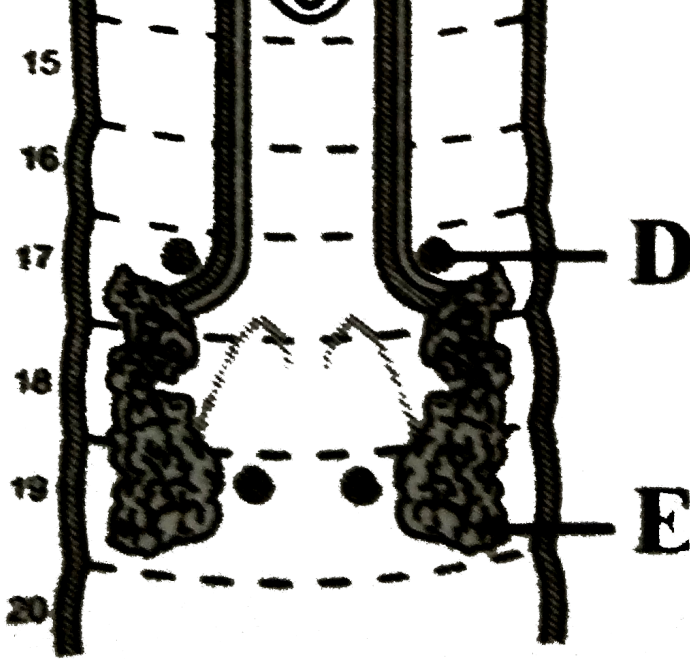
Answer: C



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63. In the given diagram of the reproductive system of earthworm, Identify parts labelled as A, B, C, D, E and select the correct option





- A. Seminal vesicle      B. Spermathecae      C. Prostate gland      D. Ovary      E. Accessory gland
- B. Seminal vesicle      A. Ovary      C. Accessory gland      D. Spermathecae      E. Prostate gland
- C. Spermathecae      B. Ovary      C. Seminal vesicle      D. Ovary      E. Prostate gland
- D. Spermathecae      B. Seminal vesicle      C. Ovary      D. Accessory gland      E. Prostate gland

Answer: D



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64. Which one of the following structures in *Pheretima* is correctly matched with its function ?

- A. Clitellum - Secretes cocoon
- B. Gizzard - Absorbs digested food
- C. Setae - Provides defence against predators
- D. Typhlosole - Storage of extra nutrients

**Answer: A**



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

Column I

Column II

- |                            |       |                   |
|----------------------------|-------|-------------------|
| A. Vermicomposting         | (i)   | Ectonephric       |
| B. Pharyngeal nephridia    | (ii)  | Locomotion        |
| C. Integumentary nephridia | (iii) | Earthworm         |
| D. Setae                   | (iv)  | Enteronephric     |
| E. Spermathecae            | (v)   | Store spermatozoa |

A. A-(iii),B-(iv),C-(i),D-(ii),E-(v)

B. A-(v),B-(i),C-(iv),D-(ii),E-(iii)

C. A-(iii),B-(ii),C-(iv),D-(i),E-(v)

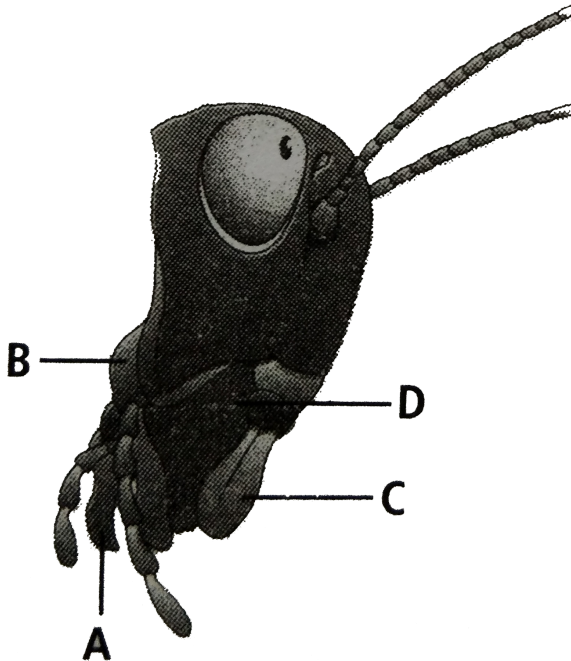
D. A-(iii),B-(v),C-(i),D-(iv),E-(ii)

**Answer: A**



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**66.** The given figure represent heat region of cockroach. In which one of the options all the four parts A,B,C and D are labelled correctly ?

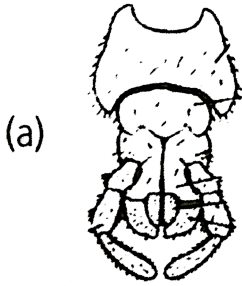


- |    |          |          |          |          |
|----|----------|----------|----------|----------|
|    | A        | B        | C        | D        |
| A. | Labrum   | Mandible | Maxilla  | Labium   |
|    | A        | B        | C        | D        |
| B. | Mandible | Maxilla  | Labium   | Labrum   |
|    | A        | B        | C        | D        |
| C. | Maxilla  | Labium   | Mandible | Labrum   |
|    | A        | B        | C        | D        |
| D. | Labium   | Maxilla  | Labrum   | Mandible |

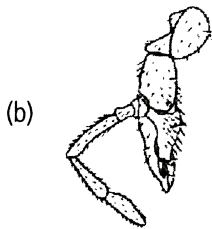
Answer: D

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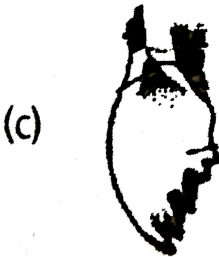
67. Which of the following figures shows the mandibles of cockroach ?



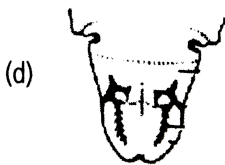
A.



B.



C.



D.

Answer: C



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68. In the mouth parts of a cockroach, the labium forms I while II acts as a tongue.

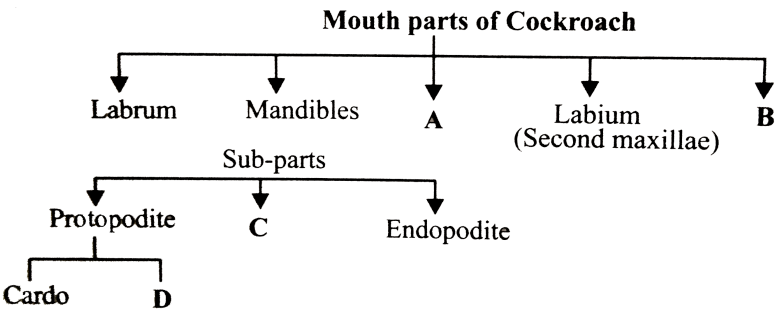
- A. (i) - upper lip , (ii) - maxilla
- B. (i) - upper lip , (ii) - hypopharynx
- C. (i) - upper lip , (ii) - maxilla
- D. (i) - lower lip , (ii) - hypopharynx

**Answer: D**



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69. Complete the following flowchart by selecting the correct option



- |    |                |             |             |                |
|----|----------------|-------------|-------------|----------------|
|    | A              | B           | C           | D              |
| A. | Stipes         | Hypopharynx | Exopodite   | First maxillae |
| B. | A              | B           | C           | D              |
|    | Stipes         | Exopodite   | Hypopharynx | First maxillae |
| C. | A              | B           | C           | D              |
|    | First maxillae | Hypopharynx | Exopodite   | Stipes         |
| D. | A              | B           | C           | D              |
|    | First maxillae | Exopodite   | Hypopharynx | Stipes         |

**Answer: C**

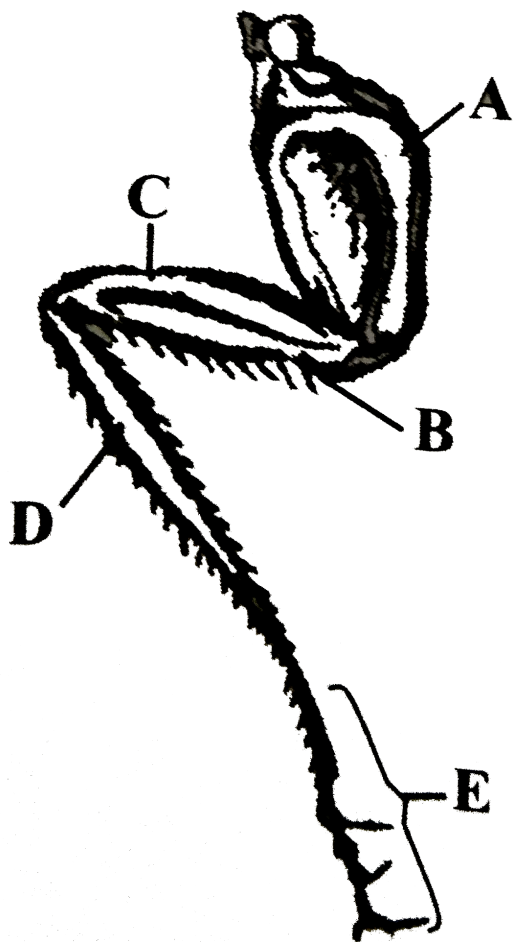


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70. In the given diagram of a leg of cockroach, parts have been indicated by alphabets. Select the answer in which these alphabets have been



correctly matched with the parts which they indicate



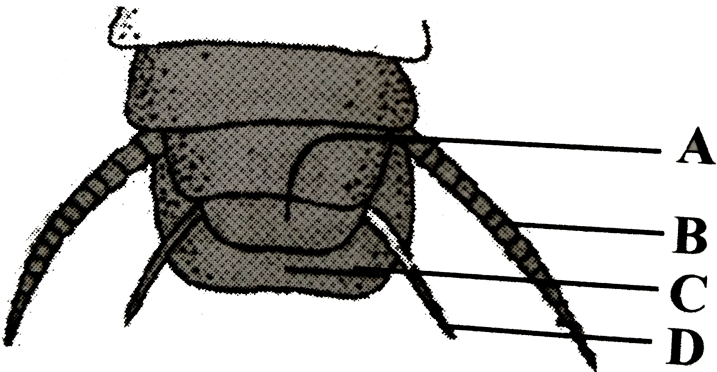
- |    |      |            |            |        |            |
|----|------|------------|------------|--------|------------|
|    | A    | B          | C          | D      | E          |
| A. | Coxa | Tibia      | Tarsus     | Femur  | Trochanter |
|    | A    | B          | C          | D      | E          |
| B. | Coxa | Femur      | Trochanter | Tarsus | Tibia      |
|    | A    | B          | C          | D      | E          |
| C. | Coxa | Tarsus     | femur      | Tibia  | Trochanter |
|    | A    | B          | C          | D      | E          |
| D. | Coxa | Trochanter | femur      | Tibia  | Tarsus     |

Answer: D



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71. The given figure represents posterior region of male cockroach. Identify the parts labelled as A,B,C and D



- |    |             |             |              |             |
|----|-------------|-------------|--------------|-------------|
|    | A           | B           | C            | D           |
| A. | 9th sternum | Anal style  | 10th tergum  | Anal cercus |
|    | A           | B           | C            | D           |
| B. | Anal style  | Anal cercus | 10th tergum  | 9th sternum |
|    | A           | B           | C            | D           |
| C. | 9th sternum | Anal cercus | 10th tergum  | Anal style  |
|    | A           | B           | C            | D           |
| D. | 9th tergum  | Anal cercus | 10th sternum | Anal style  |

Answer: C



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72. Male cockroach differs from female cockroach in having

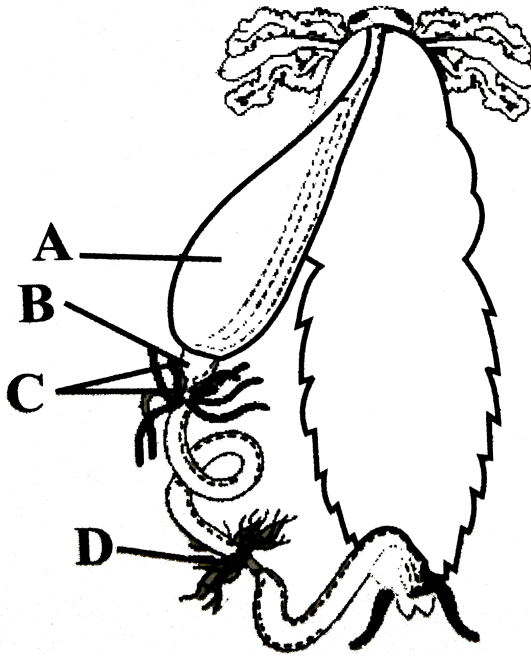
- A. antennae
- B. labrum
- C. maxillae
- D. anal styles

**Answer: D**



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73. The given figure shows alimentary canal of cockroach. Identify the parts labelled as A to D and select the correct option



- |    |         |         |                    |                    |
|----|---------|---------|--------------------|--------------------|
|    | A       | B       | C                  | D                  |
| A. | Gizzard | Crop    | Hepatic caecae     | Malpighian tubules |
| B. | Crop    | Gizzard | Hepatic caecae     | Malpighian tubules |
| C. | Crop    | Gizzard | Malpighian tubules | Hepatic caecae     |
| D. | Gizzard | Crop    | Malpighian tubules | Hepatic caecae     |

**Answer: B**



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74. Choose the incorrect pair from the matches given below.

A. Antennae - Sensory receptors

B. Metathoracic wings - Flying

C. Malpighian tubule - Excretion

D. Crop - Food grinding

**Answer: D**



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75. 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.	Malpighian tubules		hepatic caecae

	A		B
B.	fat bodies		vasa efferentia

- C.                    A                    B  
         hepatic caecae      Malpighian tubules
- D.                    A                    B  
         vas deferens      fat bodies

**Answer: C**



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**76.** Read the given paragraph

It is lined by glandular and ciliated cells. It absorbs nitrogenous waste products from haemocoel and convert them into uric acid which is excreted out through the hindgut

Which of the following structures of cockroach is referred here ?

- A. Trachea
- B. Hepatic caecum
- C. Tergum
- D. Malpighian tubule

**Answer: D**



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77. 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

**Answer: D**



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78. 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.

**Answer: B**



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**79.** 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

**Answer: B**



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**80.** Read the following statements about cockroach

(i) In male cockroach, a characteristic mushroom shaped gland is present in the 6<sup>th</sup> – 7<sup>th</sup> abdominal segments which functions as an accessory reproductive gland

Cockroach is uricotelic

(iii) The fat body and uricose glands are glandular in function

(iv) Blood from sinuses enter heart through ostia and is pumped anteriorly to sinuses again.

Which of the above statements are correct ?

A. (i), (ii) and (iv)

B. (ii) and (iii)

C. (i) and (iv)

D. (ii) and (iv)

**Answer: A**



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**81.** Which of the following statements is correct regarding cockroach ?

A. It possesses ventral nerve cord

B. Its spiracles help in excretion

C. Phallomeres are present in female cockroach

D. Compound eye is also called as ocellus.

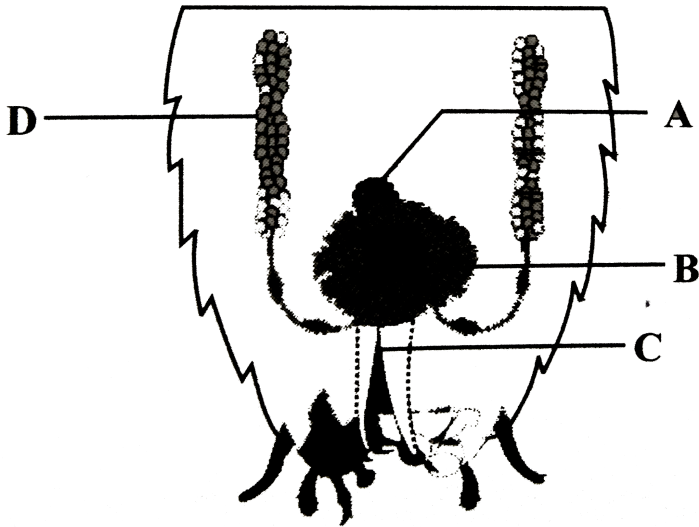
**Answer: A**



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82. Study the given figure of reproductive system of male cockroach

In which of the labelled parts are sperms stored ?



A. A

B. B

C. C

D. D

**Answer: B**



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**83.** In cockroach, the ootheca is formed by the secretion of

- A. phallic gland
- B. collateral gland
- C. mushroom gland
- D. conglobate gland

**Answer: B**



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**84.** The development of *Periplaneta americana* is

- A. holometabolous
- B. paurometabolous
- C. ametabolous
- D. hemimetabolous

**Answer: B**



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**85.** About how many times does the nymph of *Periplaneta americana* undergo moulting before becoming an adult ?

A. 4

B. 2

C. 17

D. 13

**Answer: D**



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**86.** Consider the following four statements (i) - (iv) and select the correct option stating which ones are true (T) and which ones are false (F)

(i) In male cockroach, genital pouch or chamber lies at the hind end of abdomen bounded dorsally by 9<sup>th</sup> and 10<sup>th</sup> terga and ventrally by the 9<sup>th</sup> sternum.

(ii) In cockroach, the haemolymph is composed of colourless plasma and haemocytes

(iii) In female cockroach each ovary is formed of a group of ten ovarian tubules or ovarioles, containing a chain of developing ova

(iv) In cockroach the nymph grows by moulting about 13 times to reach the adult form.

- |    |          |           |            |           |
|----|----------|-----------|------------|-----------|
| A. | (i)<br>F | (ii)<br>T | (iii)<br>F | (iv)<br>T |
| B. | (i)<br>F | (ii)<br>F | (iii)<br>T | (iv)<br>T |
| C. | (i)<br>T | (ii)<br>T | (iii)<br>F | (iv)<br>T |
| D. | (i)<br>T | (ii)<br>F | (iii)<br>T | (iv)<br>F |

**Answer: C**



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**87.** Which of the following statements is incorrect about the frog ?

- (i) Eyes are bulged out and covered by a nictitating membrane that protects them while in water
- (ii) On either side of the eyes a membranous tympanum (ear) receives sound signals
- (iii) The hind limbs end in four digits and they are largerr and muscular then force limbs that end in five digits
- (iv) Frogs exhibit sexual dimorphism.

A. (i) and (v)

B. (iii) only

C. (ii) and (iii)

D. (iv) only

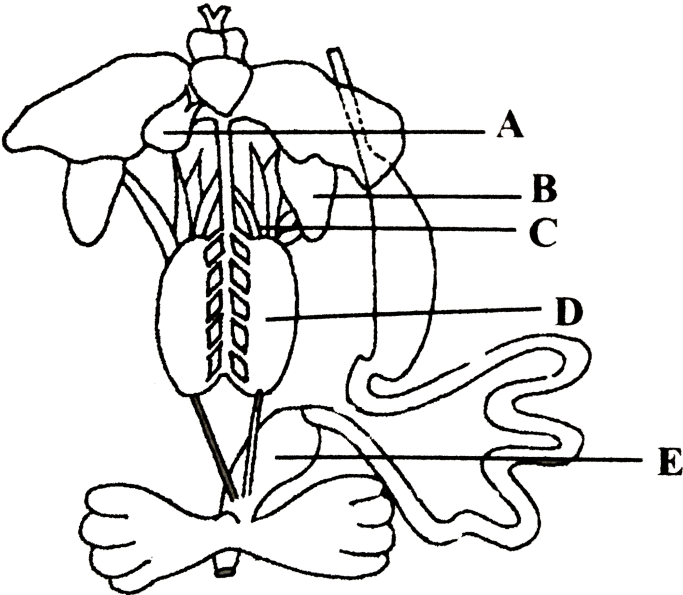
**Answer: B**



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88. The figure given here shows diagrammatic representation of internal organs of a frog

Identify A to E and select the correct option



- |    |              |           |            |        |              |
|----|--------------|-----------|------------|--------|--------------|
|    | A            | B         | C          | D      | E            |
| A. | Gall bladder | Liver     | Ovary      | Testis | Rectum       |
|    | A            | B         | C          | D      | E            |
| B. | Liver        | Pancrease | Fat bodies | Testis | Gall bladder |
|    | A            | B         | C          | D      | E            |
| C. | Pancrease    | Lung      | Testis     | Kidney | Liver        |
|    | A            | B         | C          | D      | E            |
| D. | Gall bladder | Lung      | Fat bodies | Kidney | Rectum       |

Answer: D





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**89.** In a frog, if a hole is punched in the floor of its buccal cavity, then the frog will not die as

- A. buccal respiration does not stop
- B. pulmonary respiration occurs
- C. it can store oxygen for future use
- D. respiration other than lungs will continue

**Answer: B**



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**90.** Read the following statement (P - T) and select the option that correctly fills (i) - (v)

P. The male frog has a special organ on the throat called I

Q. ii membrane is a part of ear and serves to receive sound waves

R. Dermis of the frog contains sac-like iii glands

S. Tongue of frog is iv

T. v respiration takes place in lungs on land.

A. (i) - vocal sac, (ii) - Plasma, (iii) - mucous, (iv) trilobed, (v) Pulmonary

B. (i) - vocal sac, (ii) - Tympanic , (iii) - mucous, (iv) bilobed, (v)

Pulmonary

C. (i)-vocal sac, (ii) - Pleural, (iii) - mucous, (iv) unilobed, (v) Pulmonary

D. (i) - voacl sac, (ii) - incus, (iii) - sweat, (iv) multilobed, (v) Pulmonary

**Answer: B**



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**91.** Which of the following statements is correct about the respiration in frog ?

(i) In frog, cutaneous and pulmonary respiration are found

(ii) A pair of elongated pink hollow lungs are found in thorax

During aestivation and hibernation, gaseous exchange takes place through skin.

A. (i),(ii) and (iii)

B. (i) and (iii)

C. (ii) and (iii)

D. (i) and (ii)

**Answer: A**



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**92.** Fill up the blanks in the following paragraph by selecting the correct option

The vascular system of frog is well-developed I type. The blood vascular system involves heart, blood vessels and blood. Heart has 3 chambers, two atria and one ventricle and is covered by a membrane called ii. A triangular structure called iii joins the right atrium.

- |    |        |                  |                  |
|----|--------|------------------|------------------|
|    | (i)    | (ii)             | (iii)            |
| A. | open   | conus arteriosus | neutrilemma      |
|    | (i)    | (ii)             | (iii)            |
| B. | closed | sinus venosus    | pericardium      |
|    | (i)    | (ii)             | (iii)            |
| C. | open   | neutrilemma      | conus arteriosus |
|    | (i)    | (ii)             | (iii)            |
| D. | closed | pericardium      | sinus venosus    |

**Answer: D**



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**93.** Identify the incorrect statement about frog.

- A. Parathyroid and pineal body are present
- B. There are ten cranial nerves only
- C. Optic lobes are situated in the mid brain
- D. The ventricle opens into the conus arterisus

**Answer: B**



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**94.** The hind brain in a frog consists of

- A. cerebellum
- B. medulla oblongata
- C. diencephalon
- D. Both (a) and (b)

**Answer: D**



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**95.** In frog, mesorchium is a thin fold of of membrane extending between

- A. two testes
- B. liver and kidneys
- C. two kidneys

D. kidneys and testes

**Answer: D**



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**96.** Following are given four statements (i)- (iv) related to frog. Read the statement carefully and select the option that identifies two correct statements.

(i) The brain is divided into fore-brain, mid-brain and hind-brain

(ii) Vasa efferentia enter the kidneys on their side and open into Bidder's canal

(iii) Ear acts as a hearing organ only

(iv) RBCs are enucleated and contain red coloured pigment namely haemoglobin

A. (ii) and (iii)

B. (i) and (ii)

C. (iii) and (iv)

D. (i) and (iv)

**Answer: B**



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**97.** Cloaca is a small, median chamber that is used to pass

A. faecal matter

B. urine

C. sperms

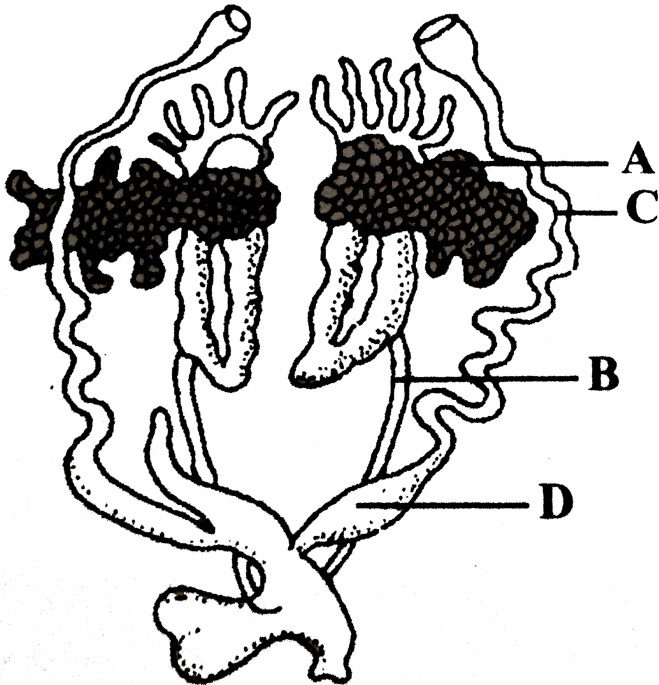
D. All of these

**Answer: D**



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98. The figure given here is related with female reproductive system of frog. Identify the parts labelled as A to D



- |    |        |                   |                |         |
|----|--------|-------------------|----------------|---------|
|    | A      | B                 | C              | D       |
| A. | Ovary  | Ureter            | Oviduct        | Ovisac  |
|    | A      | B                 | C              | D       |
| B. | Ovisac | Urinogenital duct | Bidder's canal | Ovary   |
|    | A      | B                 | C              | D       |
| C. | Ovary  | Urinogenital duct | Ovisac         | Oviduct |
|    | A      | B                 | C              | D       |
| D. | Ovisac | Urinogenital duct | Bidder's canal | Oviduct |



**Answer: A**



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**99.** Read the statements regarding frog. Which of the statements is/are correct and incorrect ?

- (i) The medulla oblongata passes out through foramen of Monoro and continues into the spinal cord
- (ii) Vasa efferentia are 10-12 in number that arise from the testes
- (iii) Ovaries have no functional connection with kidneys
- (iv) Frogs are uricotelic

A. Statements (i),(ii) and (iii) are correct while statement (iv) is incorrect

B. Statement (i) and (ii) are correct while statements (iii) and (iv) are incorrect

C. Statements (ii) and (iii) are correct while statements (i) and (iv) are incorrect

D. Statement (ii),(iii) and (iv) are correct while statement (i) is incorrect.

**Answer: C**



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**100.** Where is jelly deposited as a covering on the egg of frog ?

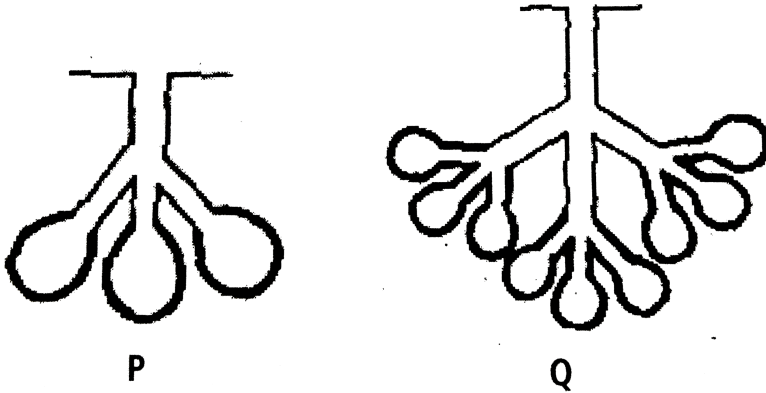
- A. In the oviduct
- B. In the water during fertilisation
- C. In the water after fertilisation
- D. In the ovary

**Answer: A**



**Watch Video Solution**

101. Refer to the given figures showing two types of glands



Which of the following statements regarding these glands is not correct ?

- A. These are the multicellular glands which pour their secretion directly through ducts at the site of action
- B. Sebaceous glands present in human skin are 'P' type of glands
- C. Brunner's glands of human intestine and sweat glands of human skin are 'Q' type of glands
- D. In 'P' type of glands, secretory intestine and sweat of flask like structure where in 'Q' type of glands, secretory portion is both

tubular and flask shaped.

**Answer: C**



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**102.** Read of 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, 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)

**Answer: D**



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**103.** Enzyme collagenase breaks the peptide bonds present in collagen protein. Excessive secretion of this enzyme will lead to weakening of which of the following body parts ?

(i) Tendons

(ii) Bones

(iii) Hair shafts

(iv) Nails and claws

(v) Intervertebral discs

A. (i),(ii) and (iii)

B. (i),(ii) and (v)

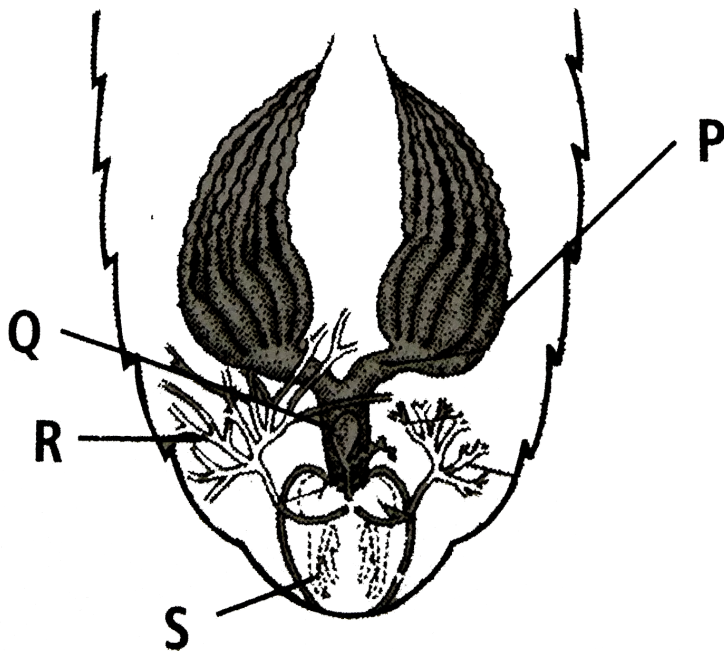
C. (iii) and (iv)

D. (ii),(iii) and (v)

**Answer: B**

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**104.** Refer to the given figure showing reproductive system of female cockroach



Identify the parts labelled as P,Q R and S and select the correct statement regarding these

- A. P represents the ovary of female cockroach, while consists of six ovarioles, each containing a row of developing ova.
- B. Q represents the left spermatheca which stores the sperms received from male during copulation
- C. R represents the right conglobate gland whose secretions serve to attract the male cockroach during mating.
- D. S represents the gonapophyses whose secretion produces the egg case of ootheca.

**Answer: B**



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**105.** 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

**Answer: A**



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**106.** Which one of the following types of cell is involved in making of the inner walls of large blood vessels ?

- A. Cuboidal epithelium
- B. columnar epithelium



C. Squamous epithelium

D. Stratified epithelium

**Answer: C**



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

A. Epithelial

B. Connective

C. Muscular

D. Neutral

**Answer: B**



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**108.** Which of the following is not a connective tissue ?

- A. Bone
- B. Cartilage
- C. Blood
- D. Muscles

**Answer: D**



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**109.** Setae help in locomotion in earthworm but are not uniformly present in all the segments. They are present in

- A. 1<sup>st</sup> segment
- B. last segment
- C. Clitellar segment
- D. 20<sup>th</sup> – 22<sup>nd</sup> segment

**Answer: D**



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**110.** Which one of the following statement is true for cockroach ?

- A. The number of ovarioles in each ovary are ten
- B. The larval stage is called caterpillar
- C. Anal styles are absent in females
- D. They are ureotelic

**Answer: C**



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**111.** Match the following and choose the correct option

- |                            |       |             |
|----------------------------|-------|-------------|
| A. Adopose tissue          | (i)   | Nose        |
| B. Stratified epithelium   | (ii)  | Blood       |
| C. Hyaline cartilage       | (iii) | Skin        |
| D. Fluid connective tissue | (iv)  | Fat storage |

A. A-(i),B-(ii),C-(iii),D-(iv)

B. A-(iv),B-(iii),C-(i),D-(ii)

C. A-(iii),B-(i),C-(iv),D-(ii)

D. A-(ii),B-(i),C-(iv),D-(iii)

**Answer: B**



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**112.** 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)

**Answer: A**



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**113.** 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)

**Answer: B**



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**114.** Match the following and choose the correct answer

- |                      |                                |
|----------------------|--------------------------------|
| A. Touch             | (i) Nasal epithelium           |
| B. Smell             | (ii) Foramen magnum            |
| C. Cranial nerves    | (iii) Sensory papillae         |
| D. Medulla oblongata | (iv) Peripheral nervous system |

A. A-(iii),B-(i),C-(ii),D-(iv)

B. A-(ii),B-(i),C-(iv),D-(iii)

C. A-(iii),B-(iv),C-(ii),D-(i)

D. A-(iii),B-(i),C-(iv),D-(ii)

**Answer: D**



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**115.** Assertion : Stomach and intestine of our body has columnar epithelium

Reason : Columnar epithelium helps in secretion and absorption.

- 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

**Answer: A**



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**116.** 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

- 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

**Answer: C**



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**117. Assertion :** Connective tissues are the most abundant and widely distributed in the body of complex animals

**Reason :** Connective tissues link and support other tissues or organs of the body.

- 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

**Answer: A**



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**118.** 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

**Answer: A**



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**119.** Assertion : Tendons attach one bone to another bone

Reason : Ligaments attach skeletal muscles to bones.

- 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

**Answer: D**



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**120.** 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

**Answer: A**



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**121.** Assertion : Neurons protect and support the neuroglial cells

Reason : Neuroglial cells make up ninety per cent neural tissue in our body.

- 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

**Answer: D**



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**122.** Assertion : Setae are absent in clitellum

Reason : Setae help in locomotion.

- 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

**Answer: B**



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**123.** 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

**Answer: C**



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**124.** Assertion : Earthworm 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

**Answer: A**



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**125.** 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

**Answer: C**



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**126.** Assertion : Eggs of cockroach are encased in capsules called oothecae

Reason : Ootheca is a dark reddish to blackish brown capsule.

- 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

**Answer: B**



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**127. 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

**Answer: C**



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**128.** 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

**Answer: A**



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**129.** Assertion : There is hepatic portal system in frog

Reason : It is venous connection between liver and intestine in frog.

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

**Answer: B**



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