

Multi-Concept Questions

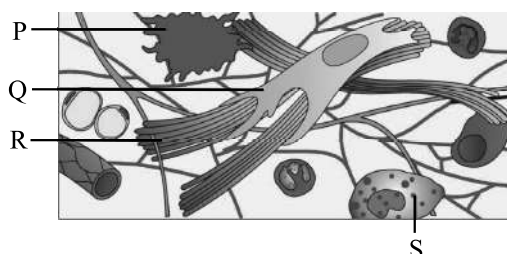


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- With the help of several ommatidia, a cockroach can receive several images of an object. This kind of vision is called
 - Nocturnal vision, being common during daytime
 - Mosaic vision, with more sensitivity but less resolution
 - Mosaic vision, with more resolution but less sensitivity
 - Nocturnal vision, with more sensitivity and more resolution

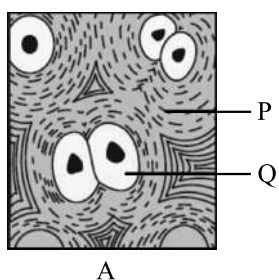
- Location of epiphyseal plate in growing bones is
 - Epiphysis
 - Metaphysis
 - Diaphysis
 - Symphysis

- Select the option with correct labelling?

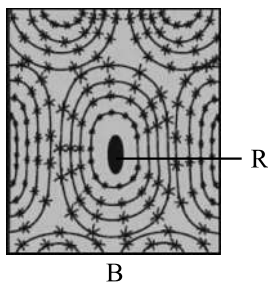


- P – Bone, R – Collagen fibres
- R – Collagen fibres, S – Macrophages
- Q – Fibroblast, S – Mast cell
- P – Macrophage, S – Fibroblast

- Identify the correct matching:



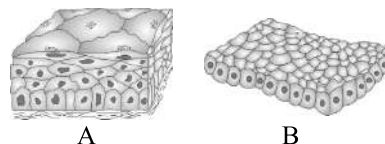
A



B

- A - Cartilage, P - Elastic fibres
 - A - Bone, Q - Osteocyte
 - B - Cartilage, R - Chondrocyte
 - B - Bone, R - Haversian canal
- Transverse canals that connect haversian canals are
 - Lacunae
 - Lamellae
 - Volkman's canals
 - Neural canal
 - Which of the following epithelium covers the inner linings of trachea, large bronchi and helps to remove mucus?
 - Ciliated columnar
 - Pseudo-stratified epithelium
 - Compound epithelium
 - Cuboidal epithelium

- Identify the correct option with respect to the figures (A & B) given below.



A

B

- A: provide protection against chemical and mechanical stresses: Stomach
- A: secrete mucus, saliva, earwax, oil, milk, digestive enzymes: Stomach
- B: found in ducts of glands: Secretion and absorption
- B: mainly present in the inner surface of hollow organs: Secretion and absorption

- Match the columns and find out the correct combination:

Cell	Function
A. Mast cells	1. Storage of fats
B. Macrophages	2. Scavengers
C. Plasma cells	3. Vasodilation
D. Adipocytes	4. Antibodies

- A-3 B-2 C-1 D-4
- A-1 B-2 C-3 D-4
- A-3 B-2 C-4 D-1
- A-3 B-4 C-2 D-1

- Epithelial tissue with thin flat cells appearing like packed tiles occurs on

- Inner lining of cheeks
- Inner lining of stomach
- Inner lining of fallopian tubes
- Outer surface of ovary

- Choose correct statement with respect to cardiac muscles.

- These muscles are structurally and functionally similar to smooth muscles.
- These muscles are structurally similar to smooth muscles and functionally similar to skeletal muscles
- The entire heart is made of cardiac muscles
- Cardiac muscles are present in heart and in the cardiac region of stomach

- Select the correct statement from the ones given below with respect to *Periplaneta americana*.

- Nervous system located dorsally, consists of segmentally arranged ganglia joined by a pair of longitudinal connectives
- Males bear a pair of short thread like anal styles
- There are 16 very long Malpighian tubules present at the junctions of midgut and hindgut
- Grinding of food is carried out only by the mouth parts

12. Match the columns and find out the correct combination:

A. Mast cells	1. Tissue fixed
B. Histiocytes	2. Antibodies
C. Plasma cells	3. Heparin
D. Adipocytes	4. Fat storage
	5. Vasoconstriction

- a. A-3 B-5 C-2 D-4
 b. A-3 B-2 C-1 D-4
 c. A-3 B-2 C-4 D-1
 d. A-3 B-1 C-2 D-4

13. Match the columns and find out the correct combination:

A. Heparin	1. Vasoconstrictor
B. Histamine	2. Macrophages
C. Serotonin	3. Anticoagulant
D. B lymphocytes	4. Vasodilators
E. Internal scavengers	5. Plasma cells

- a. A-3 B-4 C-1 D-5 E-2
 b. A-1 B-2 C-3 D-4 E-5
 c. A-4 B-3 C-1 D-5 E-2
 d. A-5 B-4 C-3 D-2 E-1

14. Read the following statements and choose the incorrect one.

- a. The structural modification of cells in different tissues is due to their different functions
 b. In our hollow visceral organ, ciliated epithelium helps in the movement of substances
 c. Blood is the only connective tissue in which structural fibres, called collagen, are secreted by liver
 d. Compound epithelium covers the dry surface of skin and moist surface of buccal cavity.

15. Read the following statements and find out the incorrect statements.

- a. The entire heart is made up of cardiac muscles
 b. A specialised cardiac musculature called the nodal tissue is also distributed in the heart.
 c. The walls of ventricles are much thicker than that of the atria
 d. Left ventricle gives rise to right systemic aorta which gives supply of oxygenated blood to whole body

16. Loose connective tissue is

- a. Areolar
 b. Bone
 c. Blood
 d. Cartilage

17. Match the columns and find out the correct combination:

A. Simple squamous epithelium	1. Ureters
B. Simple cuboidal epithelium	2. Epididymis
C. Non-ciliated simple columnar epithelium	3. Lining of alveoli of lungs
D. Transitional epithelium	4. Lining of Thyroid vesicles
E. Pseudostratified non-ciliated columnar epithelium	5. Mucosa of stomach & intestine

- a. A-2 B-4 C-3 D-5 E-1
 b. A-3 B-4 C-5 D-1 E-2
 c. A-1 B-2 C-4 D-3 E-5
 d. A-5 B-3 C-2 D-4 E-1

18. Read the following statements and find out the incorrect statement.

- A. About 45-50% of the body weight of a human adult is contributed by muscles
 B. Muscles have special properties like excitability, contractility, extensibility and elasticity
 C. Based on their location, three types of muscles are identified: skeletal, smooth and cardiac.
 D. Based on appearance, cardiac muscles are striated. They are involuntary in nature as the nervous system does not control their activity directly.
 a. B & C
 b. A & C
 c. Only A
 d. A & D

19. Read the given statements about blood vascular system of cockroach.

- A. Circulatory system of cockroach is of closed type
 B. It contains no blood vessels except aorta of heart.
 C. Heart is six chambered
 D. The haemolymph is composed of colourless plasma and haemocytes

Which of the statement (s) given above is/are incorrect?

- a. Only A
 b. A, B and C
 c. A and C
 d. Only D

20. Read the following statements and find out the incorrect statement.
- Mosaic vision is common during night hence called nocturnal vision
 - In cockroach, brain supplies nerves to antennae and compound eyes
 - Fat body, nephrocytes and urecose glands also helps in excretion in cockroach
 - Male cockroach bears one pair of collateral glands which functions as accessory reproductive glands.

21. Choose correct option which have all right statement for bones.
- Bones have a hard and non-pliable ground substance
 - Matrix of bone is rich in calcium salt and free from collagen fibres
 - The bone marrow in some bones is the site of production of blood cells
 - Bone is a type of specialised connective tissue
- A, B and C
 - A, C and D
 - A and D only
 - All of these

22. Match the columns and find out the correct combination:

A. Basophils	1. Phagocytosis
B. Neutrophils	2. Inflammation
C. Plasma cells	3. Blood clotting
D. Thrombocytes	4. Antibodies

- A-2 B-1 C-4 D-3
- A-2 B-1 C-3 D-4
- A-1 B-2 C-4 D-3
- A-4 B-1 C-2 D-3

23. Read the following statements and choose how many statements are correct?
- In the case of earthworm, malpighian tubules are present at the junction on midgut and hindgut.
 - Adipose tissue is a dense irregular connective tissue and it is a reservoir of stored food.
 - In animals like earthworm, cells, tissues, organs and organ system split up the work in a way that ensures the survival of body.
 - Epithelia have two free surfaces one facing a body fluid and one faces the outside environment.
 - Smooth muscles are the component of internal organs.
- 3
 - 4
 - 1
 - 5

24. All the following statements are correct, except
- Hyaline cartilage is lacking fibres and is present in sternum, hyoid and ribs.
 - White fibrous cartilage is strongest and is present in the intervertebral disc.
 - Elastic cartilage is present in the tip of nose and ear pinna.
 - Calcified cartilage is not present in the pubis of pelvic girdle of frog.
25. In frog, peripheral nervous system is divided to
- Brain and spinal
 - Cranial and spinal nerves
 - Sympathetic and parasympathetic
 - Forebrain, midbrain and hindbrain

NEET Past 10 Year Questions



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- Cuboidal epithelium with brush border of microvilli is found in: (2020)
 - Ducts of salivary glands
 - Proximal convoluted tubule of nephron
 - Eustachian tube
 - Lining of intestine
- If the head of cockroach is removed, it may live for few days because: (2020)
 - The cockroach does not have nervous system.
 - The head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.
 - The head holds a $\frac{1}{3}$ rd of a nervous system while the rest is situated along the dorsal part of its body.
 - The supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen.
- Goblet cells of alimentary canal are modified from: (2020)
 - Columnar epithelial cells
 - Chondrocytes
 - Compound epithelial cells
 - Squamous epithelial cells
- In cockroach, identify the parts of the foregut in correct sequence: (2020 Covid Re-NEET)
 - Mouth → Crop → Pharynx → Oesophagus → Gizzard
 - Mouth → Gizzard → Crop → Pharynx → Oesophagus
 - Mouth → Pharynx → Oesophagus → Crop → Gizzard
 - Mouth → Oesophagus → Pharynx → Crop → Gizzard
- Match the following columns with reference to cockroach and select the correct option: (2020 Covid Re-NEET)

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

 - (1) (iv) (iii) (v) (ii)
 - (i) (iv) (iii) (ii)
 - (ii) (iii) (i) (iv)
 - (iii) (i) (iv) (ii)
- Select the **incorrectly** matched pair from following: (2020 Covid Re-NEET)
 - Neurons - Nerve cells
 - Fibroblast - Areolar tissue
 - Osteocytes - Bone cells
 - Chondrocytes - Smooth muscle cells
- The ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in (2019)
 - Bile duct and bronchioles
 - Fallopian tubes and pancreatic duct
 - Eustachian tube and salivary duct
 - Bronchioles and fallopian tubes
- Select the correct sequence of organs in the alimentary canal of cockroach starting from mouth (2019)
 - Pharynx → Oesophagus → Crop → Gizzard → Ileum → Colon → Rectum
 - Pharynx → Oesophagus → Gizzard → Crop → Ileum → Colon → Rectum
 - Pharynx → Oesophagus → Gizzard → Ileum → Crop → Colon → Rectum
 - Pharynx → Oesophagus → Ileum → Crop → Gizzard → Colon → Rectum
- Which of the following features is used to identify a male cockroach from a female cockroach? (2018)
 - Presence of a boat shaped sternum on the 9th abdominal segment
 - Presence of caudal styles
 - Forewings with darker tegmina
 - Presence of anal cerci
- Select the correct route for the passage of sperms in male frogs: (2017-Delhi)
 - Testes → Bidder's canal → Kidney → Vasa efferentia → Urinogenital duct → Cloaca
 - Testes → Vasa efferentia → Kidney → Seminal Vesicle → Urinogenital duct → Cloaca
 - Testes → Vasa efferentia → Bidder's canal → Ureter → Cloaca
 - Testes → Vasa efferentia → Kidney → Bidder's canal → Urinogenital duct → Cloaca

Structural Organisation in Animals

11. Which of the following structures does not open into the genital chamber of female cockroaches? (2017-Gujarat)
- a. A pair of collateral glands b. A single median oviduct
c. Spermatheca d. A pair of anal cerci
12. Select in incorrect option with respect to features present in three animals. (2017-Gujarat)

	Characters	Cockroach	Earthworm	Frog
a.	Development	Direct	Indirect	Indirect
b.	Blood vascular system	Open	Closed	Closed
c.	Body surface	Dry	Moist	Moist
d.	Eyes	Compound	Absent	Simple

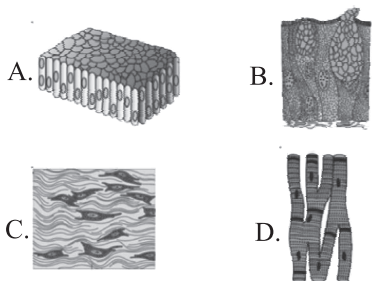
13. Smooth muscles are: (2016 - II)
- a. Involuntary, cylindrical, striated
b. Voluntary, spindle-shaped, uninucleate
c. Involuntary, fusiform, non-striated
d. Voluntary, multinucleate, cylindrical
14. In male cockroaches, sperms are stored in which part of the reproductive system? (2016 - II)
- a. Testes b. Vas deferens
c. Seminal vesicles d. Mushroom glands
15. Which of the following features is not present in *Periplaneta americana*? (2016 - I)
- a. Schizocoelom as body cavity
b. Indeterminate and radial cleavage during embryonic development
c. Exoskeleton composed of N-acetyl glucosamine
d. Metamerically segmented body
16. Which type of tissue correctly matches with its location? (2016 - I)

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

17. The terga, sterna and pleura of cockroach body are joined by: (2015)
- a. Arthrodiagonal membrane b. Cartilage
c. Cementing glue d. Muscular tissue
18. The body cells in cockroach discharge their nitrogenous waste in the haemolymph mainly in the form of: (2015 Re)
- a. Potassium urate b. Urea
c. Calcium carbonate d. Ammonia

19. Which of the following is not a function of the skeletal system? (2015 Re)
- a. Storage of minerals
b. Production of body heat
c. Locomotion
d. Production of erythrocytes
20. The function of the gap junction is to: (2015 Re)
- a. Facilitate communication between adjoining cells by connecting the cytoplasm for rapid transfer of ions, small molecules and some large molecules
b. Separate two cells from each other
c. Stop substance from leaking across a tissue
d. Performing cementing to keep neighboring cells together.
21. Choose the correctly matched pair: (2014)
- a. Cartilage - Loose connective tissue
b. Tendon - Specialised connective tissue
c. Adipose tissue - Dense connective tissue
d. Areolar tissue - Loose connective tissue
22. Choose the correctly matched pair: (2014)
- a. Inner surface of bronchioles - Squamous epithelium
b. Inner lining of salivary ducts - Ciliated epithelium
c. Moist surface of Buccal cavity - Glandular epithelium
d. Tubular parts of nephrons - Cuboidal epithelium
23. Select the correct option with respect to cockroaches: (2013)
- a. Malpighian tubules convert nitrogenous wastes into urea
b. Males bear short anal styles not present in females
c. Nervous system comprises of a dorsal nerve cord and ten pairs of ganglia
d. The forewings are tegmina which are used in flight
24. What external changes are visible after the last moult of a cockroach nymph? (2013)
- a. Labium develops
b. Mandibles become harder
c. Anal cerci develop
d. Both fore wings and hind wings develop
25. Which one of the following characteristics is common both in humans and adult frogs? (2012 Mains)
- a. Four-chambered heart
b. Internal fertilisation
c. Nucleated RBCs
d. Ureotelic mode of excretion
26. The four sketches (A, B, C and D) given below, represent

four different types of animal tissues. Which one of these is correctly identified in the options given, along with its correct location and function? (2012 Mains)



		Tissue	Location	Function
a.	(B)	Glandular epithelium	Intestine	Secretion
b.	(C)	Collagen fibres	Cartilage	Attach skeletal muscles to bones
c.	(D)	Smooth muscle tissue	Heart	Heart contraction
d.	(A)	Columnar epithelium	Nephron	Secretion and absorption

27. The supportive skeletal structures in the human external ears and in the nose tip are examples of: (2012 Mains)

- a. Ligament b. Areolar tissue
c. Bone d. Cartilage

28. Given below is the diagrammatic sketch of a certain type of connective tissue. Identify the parts labeled A, B, C and D and select the right option about them. (2012 Mains)



	Part - A	Part - B	Part - C	Part - D
a.	Macrophage	Fibroblast	Collagen fibres	Mast cells
b.	Mast cell	Macro-Phage	Fibroblast	Collagen fibres
c.	Macrophage	Collagen fibres	Fibroblast	Mast cell
d.	Mast cell	Collagen fibres	Fibroblast	Macrophage

29. Select the correct statement from the ones given below with respect to *Periplaneta americana*: (2012 Pre)

- a. Grinding of food is carried out only by the mouth parts
b. Nervous system located dorsally, consists of segmentally arranged ganglia joined by a pair of longitudinal connectives
c. Males bear a pair of short thread like anal styles
d. There are 16 very long Malpighian tubules present at the junctions of midgut and hindgut

30. Compared to those of humans, the erythrocytes in frog are: (2012 Pre)

- a. Nucleated and without haemoglobin
b. Without nucleus but with haemoglobin
c. Nucleated and with haemoglobin
d. Very much smaller and fewer

31. *Pheretima* and its close relatives derive nourishment from: (2012 Pre)

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

32. Which one of the following structures in *Pheretima* is correctly matched with its function? (2011 Mains)

- a. Setae - Defense against predators
b. Typhlosole - Storage of extra nutrients
c. Clitellum - Secretes cocoon
d. Gizzard - Absorbs digested food

33. Consider the following four statements (A-D) related to the common frog *Rana tigrina*, and select the correct option stating which ones are true (T) and which ones are false (F). (2011 Mains)

Statements:

- A. On dry land it would die due to lack of O_2 if its mouth is forcibly kept closed for a few days.
B. It has four chambered heart.
C. On dry land it turns uricotelic from ureotelic.
D. Its life history is carried out in pond water.

Options:

	(A)	(B)	(C)	(D)
a.	F	F	T	T
b.	F	T	T	F
c.	T	F	F	T
d.	T	T	F	F

34. The type of muscles present in our: (2011 Mains)

- a. Thigh are striated and voluntary
b. Upper arm are smooth muscle fibers fusiform in shape
c. Heart are involuntary and unstriated smooth muscles
d. Intestine are striated and involuntary

35. Frogs differ from humans in possessing: (2011 Mains)

- a. Nucleated red blood cells
b. Thyroid as well as parathyroid
c. Paired cerebral hemispheres
d. Hepatic portal system

Structural Organisation in Animals

36. Ureters act as urinogenital ducts in: (2011 Mains)
- Frog's both males and females
 - Frog's males
 - Human males
 - Human females
37. The cells lining the blood vessels belong to the category of: (2011 Mains)
- Columnar epithelium
 - Connective tissue
 - Smooth muscle tissue
 - Squamous epithelium
38. One very special feature in the earthworm (*Pheretima*) is that: (2011 Pre)
- It has a long dorsal tubular heart
 - Fertilization of eggs occurs inside the body
 - The typhlosole greatly increases the effective absorption area of the digested food in the intestine
 - The S-shaped setae embedded in the integument are the defensive weapons used against the enemies
39. Which of the following is correctly stated as happens in the common cockroach? (2011 Pre)
- The food is ground by mandibles and gizzard
 - Malpighian tubules are excretory organ projecting out from the colon
 - Oxygen is transported by haemoglobin blood
 - Nitrogenous excretory product is urea
40. The ciliated columnar epithelial cells in humans are known to occur in: (2011 Pre)
- Fallopian tubes and urethra
 - Eustachian tube and stomach lining
 - Bronchioles and Fallopian tubes
 - Bile duct and oesophagus