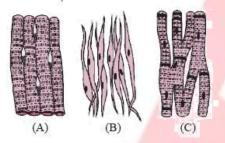
BiologyStructural Organisation in Animals



- 1. In both sexes of cockroach, a pair of jointed filamentous structures called anal cerci are present on: (2024)
 - (a) 10th segment
 - (b) 8th and 9th segment
 - (c) 11th segment
 - (d) 5th segment
- 2. Three types of muscles are given as a, b and c. Identify the correct matching pair along with their location in human body

 (2024)



Name of muscle/location

- (a) (a) Skeletal Triceps
 - (b) Smooth Stomach
 - (c) Cardiac Heart.
- (b) (a) Skeletal Biceps
 - (b) Involuntary Intestine
 - (c) Smooth Heart
- (c) (a) Involuntary Nose tip
 - (b) Skeletal Bone
 - (c) Cardiac Heart.
- (d) (a) Smooth Toes,
 - (b) Skeletal Legs
 - (c) Cardiac Heart.

3. Match List I with List II:

| | List I | List II | | |
|----|--|---------|---|--|
| A. | Unicellular glandular epithelium | (I) | Salivary glands | |
| B. | Compound epithelium | (II) | Pancreas | |
| C. | Multicellular glandular epithelium | (III) | Goblet cells of alimentary canal | |
| D. | Endocrine glandular epithelium | (IV) | Moist surface of buccal cavity | |

Choose the correct answer from the options given below:

- (a) A-IV, B-III, C-I, D-II
- (b) A-III, B-IV, C-I, D-II
- (c) A-II, B-I, C-IV, D-III
- (d) A-II, B-I, C-III, D-IV
- **4.** The Cockroach is : (2023)
 - (a) Ammonotelic only
 - (b) Uricotelic only
 - (c) Ureotelic only
 - (d) Ureotelic and Uricotelic
- **5. Statement I:** In cockroach, the forewings are transparent and prothoracic in origin.

Statement II: In cockroach, the hind wings are opaque, leathery and mesothoracic in origin. (2023)

- (a) Statement I is correct but statement II is false
- (b) Statement I is incorrect but statement II is true
- (c) Both statement I and statement II are true
- (d) Both statement I and Statement II are false.

- **6.** Match List-I with List-II.
- (2023)

| | | | (/ | |
|-----|------------------------|----------|---------------------------------------|--|
| | List -I | List -II | | |
| (A) | Columnar epithelium | (I) | Ducts of glands | |
| (B) | Ciliated epithelium | (II) | Inner lining of stomach and intestine | |
| (C) | Squamous epithelium | (III) | Inner lining of bronchioles | |
| (D) | Cuboidal epithelium | (IV) | Endotheilum | |

Choose the correct answer from the options given below:

- (a) A-III, B-II, C-I, D-IV
- (b) A-III, B-II, C-IV, D-I
- (c) A-II, B-III, C-I, D-IV
- (d) A-II, B-III, C-IV, D-I
- 7. Statement I: Ligaments are dense irregular tissue.

Statement II : Cartilage is dense regular tissue. (2023)

- (a) Statement I is correct but statement II is false
- (b) Statement I is incorrect but statement II is true
- (c) Both statement I and statement II are
- (d) Both statement I and Statement II are false.
- 8. Match List I with List II.

(2023)

| List - I | | List – II | | |
|----------|------------|--------------|-------------|--|
| (A) | Mast cells | (I) Ciliated | | |
| | | | epithelium | |
| (B) | Inner | (II) | Areolar | |
| | surface of | | connective | |
| | branchiole | | tissue | |
| (C) | Blood | (III) | Cuboidal | |
| | | | epithelium | |
| (D) | Tubular | (IV) | Specialised | |
| | parts of | | connective | |
| | nephron | | tissue | |

Choose the correct answer from the options give below:

- (a) A-II, B-III, C-I, D-IV
- (b) A-II, B-I, C-IV, D-III
- (c) A-III, B-IV, C-II, D-I
- (d) A-I, B-II, C-IV, D-III

- 9. In cockroach, excretion is brought about by (2023)
 - (A) Phallic gland
- (B) Urecose gland
- (C) Nephrocytes
- (D) Fat body
- (E) Collaterial glands

Choose the correct answer from the options given below:

- (a) A, B and E only (b) B, C and D only
- (c) B and D only
- (d) A and E only
- 10. Which of the following is characteristic feature of cockroach regarding sexual dimorphism? (2023)
 - (a) Presence of anal styles
 - (b) Presence of sclerites
 - (c) Presence of anal cerci
 - (d) Dark brown body colour and anal cerci
- **11.** Which of the following types of epithelium is present in the bronchioles and Fallopian tubes? (2022)
 - (a) Stratified squamous epithelium
 - (b) Simple squamous epithelium
 - (c) Simple columnar epithelium
 - (d) Ciliated epithelium
- **12.** Match List-I with List-II regarding the organs of Cockroach: (2022)

| 8 | | , | | |
|-----|-----------------------|---|------------------------------|--|
| | List - I | List - I | | |
| (A) | Crop | (I) | Grinding of food | |
| | | | particles | |
| (B) | Proventriculus | (II) | Secretion of digestive juice | |
| (C) | Hepatic caecae | (III) | Removal of nitrogenous waste | |
| (D) | Malpighian tubules | (IV) | Storage of food | |

Choose the correct answer from the options given below:

- (a) A-I, B-IV, C-III, D-II
- (b) A-IV, B-I, C-II, D-III
- (c) A-III, B-II, C-I, D-IV
- (d) A-II, B-IV, C-I, D-III

- **13.** Choose the correct statements: **(2022)**
 - (a) Bones support and protect softer Tissues and organs
 - (b) Weight bearing function is served by limb bones
 - (c) Ligament is the site of production of blood cells.
 - (d) Adipose tissue is specialised to store fats.
 - (e) Tendons attach one bone to another. Choose the most appropriate answer from the options given below:
 - (a) (A), (B) and (E) only
 - (b) (A), (B) and (D) only
 - (c) (B), (C) and (E) only
 - (d) (A), (C) and (D) only
- **14.** Excretion in cockroach is performed by all, EXCEPT: (2022)
 - (a) Hepatic caeca
 - (b) Urecose glands
 - (c) Malpighian tubules
 - (d) Fat body
- 15. In which of the following animals, digestive tract has additional chambers like crop and gizzard? (2022)
 - (a) Corvus, Columba, Chameleon
 - (b) Bufo, Balaenoptera, Bangarus
 - (c) Catla, Columba, Crocodilus
 - (d) Pavo, Psittacula, Corvus
- **16.** Which of the following is not a connective tissue? (2022)
 - (a) Blood
 - (b) Adipose tissue
 - (c) Cartilage
 - (d) Neuroglia
- 17. Tegmina in cockroach, arises from

(2022)

(2022)

- (a) Prothorax
- (b) Mesothorax
- (c) Metathorax
- (d) Prothorax and Mesothorax
- **18.** Match List I with List II

| List - I | | | List - II |
|----------|-------------|-----|--|
| (A) | Bronchioles | (I) | Dense Regular Connective Tissue |

| (B) | Goblet Cell | (II) | Losse Connective Tissue |
|-----|-------------------|-------|-------------------------------|
| (C) | Tendons | (III) | Glandular Tissue |
| (D) | Adipose Tissue | (IV) | Ciliated Epithelium |

Choose the correct answer from the options given below:

- (a) A-IV, B-III, C-I, D-II
- (b) A-I, B-II, C-III, D-IV
- (c) A-II, B-I, C-IV, D-III
- (d) A-III, B-IV, C-II, D-I
- **19.** Which of the following characteristic is incorrect with respect to cockroach?

(2021)

- (a) Hypopharynx lies within the cavity enclosed by the mouth parts
- (b) In females, 7th-9th sterna together form a genital pouch

(d) A ring of gastric caeca is present at

- (c) 10th abdominal segment in both sexes, bears a pair of anal cerci
- the junction of midgut and hind gut

 20. Which of the following statement is wrongly represent the nature of smooth muscle? (2021)
 - (a) They are involuntary muscles
 - (b) Communication among the cells is performed by intercalated discs
 - (c) These muscles are present in the wall of blood vessels
 - (d) These muscle have no striations
- 21. Identify the types of cell junctions that help to stop the leakage of the substances across a tissue and facilitation of communication with neighbouring cells via rapid transfer of ions and molecules (2021)
 - (a) Tight junctions and Gap junctions, respectively
 - (b) Adhering junctions and Tight junctions, respectively
 - (c) Adhering junctions and Gap junctions, respectively
 - (d) Gap junctions and Adhering junctions, Respectively

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- **22.** Following are the statements about prostomium of earth-worm (2021)
 - A. It serves as a covering for mouth
 - B. It helps to open cracks in the soil into which it can crawl
 - C. It is one of the sensory structures
 - D. It is the first body segment

Choose the correct answer from the options given below.

- (a) A, B and D are correct
- (b) A, B and C are correct
- (c) B and C are correct
- (d) A, B, C and D are correct
- **23.** Cuboidal epithelium with brush border of microvilli is found in (2020)
 - (a) Ducts of salivary glands
 - (b) Proximal convoluted tubule of nephron
 - (c) Eustachian tube
 - (d) Lining of intestine
- 24. If the head of cockroach is removed, it may live for few days because (2020)
 - (a) The cockroach does not have nervous system
 - (b) The head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body
 - (c) The head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body
 - (d) The supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen
- **25.** Goblet cells of alimentary canal are modified from (2020)
 - (a) Columnar epithelial cells
 - (b) Chondrocytes
 - (c) Compound epithelial cells
 - (d) Squamous epithelial cells
- **26.** In cockroach, identify the parts of the foregut in correct sequence

(2020 Covid Re-NEET)

- (a) Mouth \rightarrow Crop \rightarrow Pharynx \rightarrow Oesophagus \rightarrow Gizzard
- (b) Mouth \rightarrow Gizzard \rightarrow Crop \rightarrow Pharynx \rightarrow Oesophagus
- (c) Mouth \rightarrow Pharynx \rightarrow Oesophagus \rightarrow

- $Crop \rightarrow Gizzard$
- (d) Mouth \rightarrow Oesophagus \rightarrow Pharynx \rightarrow Crop \rightarrow Gizzard
- **27.** 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 caecae | |
| 2. | Secrete gastric juice | (ii) | 10th segment | |
| 3. | 10 pairs | (iii) | Proventriculus | |
| 4. | Anal cerci | (iv) | Spiracles | |
| | | (v) | Alary muscles | |

1 2 3 4

- (a) (iv) (iii) (v) (ii)
- (b) (i) (iv) (iii) (ii)
- (c) (ii) (iii) (i) (iv)
- (d) (iii) (i) (iv) (ii)
- 28. Select the incorrectly matched pair from following (2020 Covid Re-NEET)
 - (a) Neurons Nerve cells
 - (b) Fibroblast Areolar tissue
 - (c) Osteocytes Bone cells
 - (d) Chondrocytes Smooth muscle cells
- 29. Ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in (2019)
 - (a) Bile duct and Bronchioles
 - (b) Fallopian tubes and Pancreatic duct
 - (c) Eustachian tube and Salivary duct
 - (d) Bronchioles and Fallopian tubes
- **30.** Select the correct sequence of organs in the alimentary canal of cockroach starting from mouth (2019)
 - (a) Pharynx \rightarrow Oesophagus \rightarrow Crop \rightarrow Gizzard \rightarrow Ileum \rightarrow Colon \rightarrow Rectum
 - (b) Pharynx \rightarrow Oesophagus \rightarrow Gizzard \rightarrow Crop \rightarrow Ileum \rightarrow Colon \rightarrow Rectum
 - (c) Pharynx \rightarrow Oesophagus \rightarrow Gizzard \rightarrow Ileum \rightarrow Crop \rightarrow Colon \rightarrow Rectum
 - (d) Pharynx \rightarrow Oesophagus \rightarrow Ileum \rightarrow Crop \rightarrow Gizzard \rightarrow Colon \rightarrow Rectum

- **31.** Which of the following feature is used to identify a male cockroach from a female cockroach? (2018)
 - (a) Presence of a boat shaped sternum on the 9th abdominal segment
 - (b) Presence of caudal styles
 - (c) Forewings with darker tegmina
 - (d) Presence of anal cerci
- **32.** Select the correct route for the passage of sperms in male frogs (2017)
 - (a) Testes → Bidder's canal → Kidney →
 Vasa efferentia → Urinogenital duct
 → Cloaca
 - (b) Testes → Vasa efferentia → Kidney →
 Seminal Vesicle → Urinogenital duct
 → Cloaca
 - (c) Testes → Vasa efferentia → Bidder's canal → Ureter → Cloaca
 - (d) Testes → Vasa efferentia → Kidney → Bidder's canal → Urinogenital duct → Cloaca
- 33. Which of the following structures does not open into the genital chamber of female cockroaches? (2017)
 - (a) A pair of collateral glands
 - (b) A single median oviduct
 - (c) Spermatheca
 - (d) A pair of anal cerci
- **34.** Select incorrect option with respect to features present in three animals **(2017)**

| | Chara | Cockro | Earthw | Frog |
|-----|--------|--------|----------|-------|
| | cters | ach | orm | |
| (a) | Develo | Direct | Indirect | Indir |
| | pment | | | ect |
| (b) | Blood | Open | Closed | Close |
| | vascul | | | d |
| | ar | | | |
| | syste | | | |
| | m | | | |
| (c) | Body | Dry | Moist | Moist |
| | surfac | | | |
| | e | | | |
| (d) | Eyes | Compo | Absent | Simp |
| | | und | | 1e |

- **35.** Smooth muscles are (2016 II)
 - (a) Involuntary, cylindrical, striated
 - (b) Voluntary, spindle-shaped, uninucleate
 - (c) Involuntary, fusiform, non-striated
 - (d) Voluntary, multinucleate, cylindrical
- **36.** In male cockroaches, sperms are stored in **(2016 II)**
 - (a) Testes
 - (b) Vas deferens
 - (c) Seminal vesicles
 - (d) Mushroom glands
- **37.** Which of the following feature 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
- 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 | Tip of nose | | |
| | (-) | epithelium | | | |
| | (d) | Cuboidal | Lining | of | |
| | () | epithelium | stomach | | |

- **39.** The terga, sterna and pleura of cockroach body are joined by **(2015)**
 - (a) Arthrodial membrane
 - (b) Cartilage
 - (c) Cementing glue
 - (d) Muscular tissue
- **40.** 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

- **41.** 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
- **42.** 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
- **43.** 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

44. 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
- **45.** 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) Forewings are tegmina which are used in Flight
- 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