

# Prachand NEET 2025

## Zoology

### Structural Organisation in Animals

DPP 01

**Q1** Read the following statements and find out the **incorrect** statement.

- (A) Numerous ommatidia in cockroach eyes provide a mosaic type of vision.
- (B) In cockroach, brain supplies nerves to antennae and compound eyes.
- (C) Fat body, nephrocytes and urecose glands also helps in excretion in cockroach.
- (D) Male cockroach bears one pair of collateral glands which functions as accessory reproductive glands.

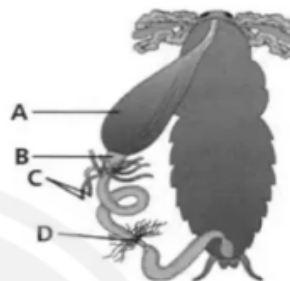
**Q2** Consider the following four statements (i) - (iv) and select the **correct** option stating which ones are **true** (T) and which ones are **false** (F).

- (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-F, ii-T, iii-F, iv-T
- (B) i-F, ii-F, iii-T, iv-T
- (C) i-T, ii-T, iii-F, iv-T
- (D) i-T, ii-F, iii-T, iv-F

**Q3** The given figure shows alimentary canal of cockroach. Identify the parts labelled as **A** to **D**

and select the **correct** option.



- (A) A - Gizzard; B - Crop; C - Hepatic caecae; D - Malpighian tubules
- (B) A - Crop; B - Gizzard; C - Hepatic caecae; D - Malpighian tubules
- (C) A - Crop; B - Gizzard; C - Malpighian tubules; D - Hepatic caecae
- (D) A - Gizzard; B - Crop; C - Malpighian tubules; D - Hepatic caecae

**Q4** A ring of 6-8 blind tubules present at the junction of foregut and midgut and are called:

- (A) gastric caecae which secrete digestive juice.
- (B) hepatic caecae which secrete digestive juice.
- (C) intestinal caecae which help in grinding the food.
- (D) both (A) and (B)

**Q5** Select the **correct** option with respect to cockroaches.

- (A) The fore wings are tegmina which are used in flight.
- (B) Malpighian tubules convert nitrogenous wastes into urea.
- (C)



Males bear a pair of short, thread like anal styles which are absent in females.

(D) Nervous system comprises of a dorsal nervecord and ten pairs of ganglion.

**Q6** Match **Column - I** with **Column - II**.

Column I		Column II	
(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

**Q7** Select the **correct** statement from the ones given below with respect to *Periplaneta americana*:

(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) Cockroaches are dioecious and both sexes have well developed reproductive organs

(D) there are 16 very long Malpighian tubules present at the junctions of midgut and hindgut.

**Q8** Which of the following statements is **correct**?

(A) Tissue is a group of similar cells along with intercellular substances that perform a specific function.

(B) Neural tissue exerts least control over the body response.

(C) Smooth muscles are voluntary.

(D) Skin is dense regular connective tissue.

**Q9** Consider the following statements.

**Statement-I:** Cardiac muscles are involuntary.

**Statement-II:** Function of smooth muscle and cardiac muscles are not directly controlled.

Choose the **correct** answer from the options given below:

(A) Both Statement-I and Statement-II are correct.

(B) Statement-I is correct, but Statement-II is incorrect.

(C) Statement-I is incorrect, but Statement-II is correct.

(D) Both Statement-I and Statement-II are incorrect.

**Q10** Which of the following statements are **incorrect**?

I. Endocrine glands have ducts.

II. Compound epithelium covers the moist surface of the skin.

III. All connective tissue cells secrete fibres of structural proteins called elastin.

IV. The cells of connective tissues, except blood, secrete fibres.

(A) Only I and II

(B) Only II and III

(C) Only I and IV

(D) Only I, II and III

**Q11** Which of the following statements are **incorrect**?

I. Biceps are skeletal muscles.

II. Skeletal muscle fibres are taper at both ends.

III. Cardiac muscles are branched.

(A) Only I and II

(B) Only II and III

(C) III only

(D) II only

**Q12** Which of the following statements about neural tissue is **incorrect**?

(A) Neurons are excitable cells and functional units of the neural system.

(B)



Neuroglial cells support and protect neurons, constituting more than half of neural tissue.

- (C) Electrical disturbances in neurons stimulate only adjacent nephrons.
- (D) Neural tissue controls the body's responsiveness to changing conditions.

**Q13** All the given statements are **correct, except:**

- (A) Among cell junctions, adhering junctions help to stop substances from leaking across a tissue.
- (B) Stomach and intestine of our body have columnar epithelium.
- (C) The squamous epithelium is made of a single thin layer of flattened cells.
- (D) The ciliated epithelial cells are required to move particles or mucus in a specific direction.

**Q14** Matrix is present between cells and fibres known as ground substance. The ground substance in most connective tissue is secreted by:

- (A) mast cells.
- (B) eosinophil cells.
- (C) fibroblast cells.
- (D) monocyte cells.

**Q15** Cuboidal epithelium with brush border of microvilli is found in:

- (A) lining of intestine.
- (B) ducts of salivary glands.
- (C) proximal convoluted tubule of nephron.
- (D) stomach.

**Q16** In humans, ciliated epithelial cells are mainly present in:

- (A) larynx and salivary duct.
- (B) bronchioles and fallopian tubes.
- (C) bile duct and bronchioles.
- (D) fallopian tubes and larynx.

**Q17**

Which is **not** correct statement about stomach, lung, heart and kidney?

- (A) All are made up of epithelial, connective, muscular and neutral tissue.
- (B) All are considered as organ.
- (C) Stomach and heart are made up of four types of tissue, but lung and kidney are made up of two types of tissue.
- (D) All exhibit division of labour.

**Q18 Assertion(A):** Cells of Adipose tissue are specialised to store carbohydrates.

**Reason(R):** Excess nutrients, which not used immediately converted into fats and are stored in this tissue.

- (A) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is a correct explanation of **Assertion (A)**.
- (B) Both **Assertion (A)** and **Reason (R)** are the true, but **Reason (R)** is not a correct explanation of **Assertion (A)**.
- (C) **Assertion (A)** is true, and **Reason (R)** is false.
- (D) **Assertion (A)** is false, and **Reason (R)** is true.

**Q19 Assertion(A):** Compound epithelium covers the inner lining of pancreatic ducts.

**Reason(R):** Compound epithelium has a limited role in secretion.

- (A) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is a correct explanation of **Assertion (A)**.
- (B) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is not a correct explanation of **Assertion (A)**.
- (C) **Assertion (A)** is true, and **Reason (R)** is false.
- (D) **Assertion (A)** is false, and **Reason (R)** is true.

**Q20 Assertion(A):** The squamous epithelium is made of a single thin layer of flattened cells with irregular boundaries.

**Reason(R):** They are found in walls of blood vessels and air sacs of lungs.



- (A) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is a correct explanation of **Assertion (A)**.
- (B) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is not a correct explanation of **Assertion (A)**.
- (C) **Assertion (A)** is true, and **Reason (R)** is false.
- (D) **Assertion (A)** is false, and **Reason (R)** is true.

**Q21** Match **List-I** with **List-II** to find out the **correct** option.

	List-I		List-II
A.	Mast cells	I.	Alimentary canal
B.	Goblet cells	II.	Areolar connective tissue
C.	Blood	III.	Secrete modified polysaccharides
D.	Cells of connective tissue	IV.	Specialised connective tissue

- (A) A-III, B-IV, C-II, D-I  
 (B) A-I, B-II, C-IV, D-III  
 (C) A-II, B-III, C-I, D-IV  
 (D) A-II, B-I, C-IV, D-III

**Q22** Match **List-I** with **List-II** to find out the **correct** option.

	List - I		List - II
A.	Adipose tissue	I.	Nose
B.	Compound epithelium	II.	Blood
C.	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)

**Q23** What is the name of the special venous connection between the liver and intestine in frogs?

- (A) Hepatic portal system  
 (B) Renal portal system  
 (C) Cardiovascular connection  
 (D) Intestinal venous pathway

**Q24** Choose the **correct** option after carefully reading the statements:

- (I) Body of a frog is divisible into head, neck and trunk.  
 (II) Eyes are bulged.  
 (III) The forelimbs alone help in swimming and walking.  
 (IV) Feet have webbed digits.  
 (V) Above the mouth, a nostril is present.

- |                  |              |
|------------------|--------------|
| (A) <b>True</b>  | <b>False</b> |
| II, IV           | I, III, V    |
| (B) I, II, IV, V | III          |
| (C) I, II, V     | III, IV      |
| (D) I, II        | IV, III, V   |

**Q25** What is the function of the cloaca in frogs?

- (A) Maturation of sperm  
 (B) Hearing and balancing  
 (C) Passing faecal matter, urine, and sperm to the exterior  
 (D) Only passing urine to the exterior.

**Q26** The circulatory system of *Rana tigrina* consists of:

- I. blood flows through a closed network of blood vessels.  
 II. composed of heart, blood vessels, blood, lymph, lymph channels and lymph nodes.  
 III. a triangular sinus venosus of heart receives deoxygenated blood first.



IV. ventricle opens into conus arteriosus on the dorsal side of the heart.

V. pleura.

- |                  |            |
|------------------|------------|
| (A) True         | False      |
| I, II, III       | IV, V      |
| (B) I, II, IV, V | III        |
| (C) I, II, V     | III, IV    |
| (D) I, II        | IV, III, V |

- Q27** Select the **correct** sequence of organs in the alimentary canal of the frog starting from the mouth.
- (A) Pharynx → Oesophagus → Gizzard → Crop → Ileum → Colon → Rectum
- (B) Pharynx → Oesophagus → Ileum → Crop → Gizzard → Colon → Rectum
- (C) Buccal cavity → Pharynx → Oesophagus → Stomach → Intestine → Rectum → Cloaca
- (D) Buccal cavity → Pharynx → Oesophagus → Stomach → Intestine → Cloaca → Rectum
- Q28** Which of the following statements is **incorrect** w.r.t frog?
- (A) There are ten pairs of cranial nerves arising from the brain.
- (B) Forebrain includes olfactory lobes, paired cerebral hemispheres and paired diencephalon.
- (C) The medulla oblongata passes out through the foramen magnum.
- (D) Brain is enclosed in a bony structure called cranium.
- Q29 Assertion (A):** In frogs, the excretory framework encompasses a dual set of kidneys, ureters, a

cloaca, and a urinary bladder.

**Reason (R):** Kidneys are condensed, deep red, and resemble beans.

- (A) Both **Assertion (A)** and **Reason (R)** are the true, and **Reason (R)** is a correct explanation of **Assertion (A)**.
- (B) Both **Assertion (A)** and **Reason (R)** are the true, but **Reason (R)** is not a correct explanation of **Assertion (A)**.
- (C) **Assertion (A)** is true, but **Reason (R)** is false.
- (D) **Assertion (A)** is false, but **Reason (R)** is true.

- Q30** Match **List-I** with **List-II** to find out the **correct** option.

List - I		List - II	
A	Tubes from ovaries to cloaca	(I)	Vasa efferentia
B	10-12 tubes entering Bidder's canal	(II)	Kidney
C	Bidder's canal found in	(III)	Sensory papillae
D	Organs of touch	(IV)	Oviduct

- (A) (A)–(IV), (B)–(I), (C)–(II), (D)–(III)
- (B) (A)–(IV), (B)–(II), (C)–(III), (D)–(I)
- (C) (A)–(II), (B)–(III), (C)–(IV), (D)–(I)
- (D) (A)–(II), (B)–(IV), (C)–(III), (D)–(I)



## Answer Key

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Q1 (D)  
Q2 (C)  
Q3 (B)  
Q4 (D)  
Q5 (C)  
Q6 (B)  
Q7 (C)  
Q8 (A)  
Q9 (A)  
Q10 (D)  
Q11 (D)  
Q12 (C)  
Q13 (A)  
Q14 (C)  
Q15 (C)

Q16 (B)  
Q17 (C)  
Q18 (D)  
Q19 (B)  
Q20 (B)  
Q21 (D)  
Q22 (B)  
Q23 (A)  
Q24 (A)  
Q25 (C)  
Q26 (A)  
Q27 (C)  
Q28 (B)  
Q29 (B)  
Q30 (A)



## Hints & Solutions

**Q1 Text Solution:**

(D)

Male cockroach bears one pair of mushroom-shaped glands which is present in 6<sup>th</sup> - 7<sup>th</sup> abdominal segments and functions as accessory reproductive glands.

[Old NCERT Class 11<sup>th</sup> Page no. 114]

**Q2 Text Solution:**

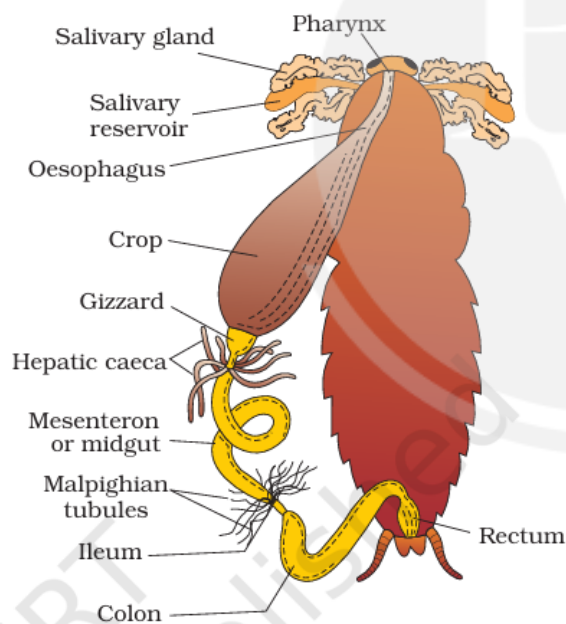
(C)

In female cockroach, each ovary is formed of a group of eight ovarian tubules or ovarioles, containing a chain of developing ova.

[Old NCERT Class 11<sup>th</sup> Page no. 114]

**Q3 Text Solution:**

(B)



[Old NCERT Class 11<sup>th</sup> Page no. 113]

**Q4 Text Solution:**

(D)

A ring of 6-8 blind tubules called hepatic or gastric caeca is present at the

junction of foregut and midgut, which secrete digestive juice.

[Old NCERT Class 11<sup>th</sup> Page no. 113]

**Q5 Text Solution:**

(C)

- Malpighian tubules convert nitrogenous wastes into uric acid.
- A cockroach's nervous system is made up of a double ventral nerve cord and multiple pairs of ganglia.
- The forewings of a cockroach, called tegmina, are not used for flight.

[Old NCERT 11<sup>th</sup> Page no. 112, 114]

**Q6 Text Solution:**

(B)

Phallomere - The external genitalia

Gonopore - Opening of the ejaculatory duct

Spermatophore - Bundles of sperm

Ovarioles - Chain of developing ova

[Old NCERT Class 11<sup>th</sup> Page no. 114]

**Q7 Text Solution:**

(C)

- Gizzard also helps in grinding the food particles.
- The nervous system of cockroach consists of a series of fused, segmentally arranged ganglia joined by paired longitudinal connectives on the ventral side.
- At the junction of midgut and hindgut is present another ring of 100-150 yellow coloured thin filamentous Malpighian tubules.

[Old NCERT 11<sup>th</sup> Page no. 113, 114]

**Q8 Text Solution:**

(A)





- Tissue is a group of similar cells along with intercellular substances that perform a specific function.
- Neural tissue exerts the greatest control over the body's responsiveness to changing conditions.
- Smooth muscles are involuntary.
- Skin is dense irregular connective tissue.

[Old NCERT, Class 11<sup>th</sup> Page No.- 100, 103,105]

**Q9 Text Solution:**

(A)

Smooth muscle and cardiac muscle are involuntary. We usually are not able to make it contract merely by thinking about it as we can do with skeletal muscles.

[Old NCERT, Class 11<sup>th</sup> Page No.- 105]

**Q10 Text Solution:**

(D)

- Endocrine glands are ductless.
- Compound epithelium covers the dry surface of the skin, the moist surface of buccal cavity, pharynx, inner lining of ducts of salivary glands and of pancreatic ducts.
- In all connective tissues except blood, the cells secrete fibres of structural proteins called collagen or elastin.

[Old NCERT, Class 11<sup>th</sup> Page no.- 102, 103]

**Q11 Text Solution:**

(D)

- Biceps are skeletal muscles.
- The smooth muscle fibres taper at both ends (fusiform).
- Cardiac muscle tissue is a contractile tissue present only in the heart. Cardiac muscles are branched.

[Old NCERT, Class 11<sup>th</sup> Page no.- 104,105]

**Q12 Text Solution:**

(C)

Arrival of the disturbance at the neuron's endings, or output zone, triggers events that may cause stimulation or inhibition of adjacent neurons and other cells.

[Old NCERT, Class 11<sup>th</sup> Page no.- 105, 106]

**Q13 Text Solution:**

(A)

- Tight junctions help to stop substances from leaking across a tissue. Adhering junctions perform cementing to keep neighbouring cells together.
- Stomach and intestine of our body have columnar epithelium.
- The squamous epithelium is made of a single thin layer of flattened cells.
- The ciliated epithelial cells are required to move particles or mucus in a specific direction.

[Old NCERT, Class 11<sup>th</sup> Page no.- 101, 102]

**Q14 Text Solution:**

(C)

The ground substance in most connective tissue is secreted by fibroblast cells.

[Old NCERT, Class 11<sup>th</sup> Page no.- 103]

**Q15 Text Solution:**

(C)

- Cuboidal epithelium with brush border of microvilli is found in the proximal convoluted tubule of the nephron.
- Ducts of salivary gland is lined by compound epithelium.
- The columnar epithelium is found in the lining of stomach and intestine.

[Old NCERT, Class 11<sup>th</sup> Page no.- 101, 102]

**Q16 Text Solution:**

(B)

- Bronchioles and Fallopian tubes are lined by ciliated





epithelium.

[Old NCERT, Class 11<sup>th</sup> Page no.- 101]

**Q17 Text Solution:**

(C)

Stomach, lungs, heart and kidneys, all are organs and are made up of four types of tissues i.e. epithelial, connective, muscular and neural tissue. All these organs splits up the work in a way that they exhibit division of labour.

[Old NCERT, Class 11<sup>th</sup> Page no.- 100, 101, 120]

**Q18 Text Solution:**

(D)

Adipose tissue is specialized to store fats, not carbohydrates.

[Old NCERT, Class 11<sup>th</sup> Page no.- 103]

**Q19 Text Solution:**

(B)

- Compound epithelium cover the dry surface of the skin, the moist surface of buccal cavity, pharynx, inner lining of ducts of salivary glands and of pancreatic ducts.
- Compound epithelium is made up of more than one layer (multi-layered) of cells and thus has a limited role in secretion and absorption. Their main function is to provide protection against chemical and mechanical stresses.

[Old NCERT, Class 11<sup>th</sup> Page no.- 102]

**Q20 Text Solution:**

(B)

The squamous epithelium is made of a single thin layer of flattened cells with irregular boundaries. They are found in the walls of blood vessels and air sacs of lungs and are involved in functions like forming a diffusion boundary.

[Old NCERT, Class 11<sup>th</sup> Page no.- 101]

**Q21 Text Solution:**

(D)

Mast cells - Areolar connective tissue

Goblet cells - Alimentary canal

Blood - Specialized connective tissue (fluid connective tissue).

Cells of connective tissue - Secrete modified polysaccharides

[Old NCERT, Class 11<sup>th</sup> Page no.- 101, 103]

**Q22 Text Solution:**

(B)

Adipose tissue	Fat storage
Compound epithelium	Skin
Cartilage	Nose
Fluid connective tissue	Blood

[Old NCERT, Class 11<sup>th</sup> Page no.- 103, 104]

**Q23 Text Solution:**

(A)

The special venous connection between the liver and intestine in frogs is called the hepatic portal system.

[New NCERT Class 11<sup>th</sup> Page No. 82]

**Q24 Text Solution:**

(A)

- Body of a frog is divisible into head and trunk. A neck and tail are absent.
- Eyes are bulged and covered by a nictitating membrane.
- The forelimbs and hind limbs help in swimming, walking, leaping and burrowing.
- Feet have webbed digits that help in swimming.
- Above the mouth, a pair of nostrils is present.

[New NCERT Class 11<sup>th</sup> Page No. 80]

**Q25 Text Solution:**



(C)

The cloaca in frogs functions to pass faecal matter, urine, and sperms to the exterior.

[New NCERT Class 11<sup>th</sup> Page No. 84]

**Q26 Text Solution:**

(A)

- Circulatory system is closed type as blood flows in closed vessels.
- Blood vascular system composed of heart, blood vessels, blood, lymph, lymph channels and lymph nodes.
- A triangular sinus venosus of heart receives deoxygenated blood through the major veins called vena cava.
- The ventricle opens into a sac like conus arteriosus on the ventral side of the heart.
- Heart is covered by pericardium.

[New NCERT Class 11<sup>th</sup> Page No. 82]

**Q27 Text Solution:**

(C)

The alimentary canal of a frog starts from the mouth is: Buccal cavity → Pharynx → Oesophagus → Stomach → Intestine → Rectum → Cloaca.

[New NCERT Class 11<sup>th</sup> Page No. 81, 82]

**Q28 Text Solution:**

(B)

Forebrain includes olfactory lobes, paired cerebral hemispheres and unpaired diencephalon.

[New NCERT Class 11<sup>th</sup> Page No. 83]

**Q29 Text Solution:**

(B)

- In frogs, the excretory framework encompasses a dual set of kidneys, ureters, a cloaca, and a urinary bladder.
- Kidneys are condensed, deep red, and resemble beans.

[New NCERT Class 11<sup>th</sup> Page No. 82, 83]

**Q30 Text Solution:**

(A)

Tubes from ovaries to cloaca	Oviduct
10-12 tubes entering Bidder's canal	Vasa efferentia
Bidder's canal found in	Kidney
Organs of touch	Sensory papillae

[New NCERT Class 11<sup>th</sup> Page No. 80, 82, 84]





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