



BIOLOGY

BOOKS - KUMAR PRAKASHAN KENDRA

BIOLOGY (GUJRATI ENGLISH)

**STRUCTURAL ORGANISATION IN
ANIMALS**

**Section A Exam Oriented Questions Answers
From Darpan**

1. How the biological functions of living organisms are carried out ?



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2. Write a detailed note on Epithelial tissue giving types of animal tissue.



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3. Describe characteristics and types of connective tissue.



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4. Write a note on Muscle tissue



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5. Write a note on Nervous tissue or Neural tissue



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6. Explain how organ and organ system are formed ?



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7. Explain external structure of Earthworm with diagram



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8. Describe anatomy of body of Earthworm in short



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9. Explain digestive tract of earthworm with diagram.



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10. Mention briefly about the circulatory system of earthworm.



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11. Explain nephridia of earthworm



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12. Describe nervous system of earthworm



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13. Which are sensory organs of earthworm ?

Give their function



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14. Describe structure of reproductive system of earthworm with diagram.



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15. Mention the relation of earthworm with human life.



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16. Give general information about cockroach.



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17. Describe external body structure of cockroach.



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18. Describe digestive tract or alimentary canal of cockroach with diagram.



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19. Describe circulatory system of cockroach.



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20. Describe respiratory system of cockroach



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21. Explain how excretion takes place in cockroach



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22. Explain nervous system of cockroach.



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23. Describe reproductive system of female cockroach and process of fertilization with diagram



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24. Explain : Cockroach is harmful for human beings



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25. Give common information about Frog.



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26. Describe external Morphology of frog.



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27. Describe digestive system of frog with diagram.



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28. Explain respiration in frog.



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29. Describe circulatory system of frog



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30. Describe excretory system of frog.



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31. How control and co-ordination occur in frog ? Explain.



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32. Explain about nervous system of frog.



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33. Describe sensory organs of frog.





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34. Explain reproductive system of frog with diagram.



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35. Mention the relation of frog with Human life



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Section B Difference Scientific Reason

1. Simple Epithelium and Compound Epithelium



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2. Cartilagenous tissue and Bone tissue



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3. Non-striated muscle and striated muscle



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4. Closed circulatory system and Open circulatory system



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5. Male Frog and Female Frog



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6. Earthworm is known as farmer's friend.



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7. Frogs undergo summer sleep and winter sleep (aestivation and hibernation).



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8. In cockroach well developed respiratory system is seen



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9. Explain : Cockroach is harmful for human beings



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**Section C Definitions Explanation Term Location
Function**

1. Ligaments



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2. Tendon :



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3. Perichondrium :



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4. Serum :



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5. Endomysium :



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6. Prostomium :



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7. Peristomium :



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8. Clitellum :



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9. Define:- Exonephric



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10. Define :- Enteronephric



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11. Cocoon :



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12. Worm casting :



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13. What is vermicasting



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14. Haemolymph :



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15. Haemocytes :



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16. Copulatory pad



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17. What is chyme ?



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18. Lymph :



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19. Tadpole :



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20. Urinogenital duct :



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21. Squamous Epithelium :



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22. Cuboidal Epithelium



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23. Malpighian layer :



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24. Adipose tissue :



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25. Mast cells :



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26. Hyaline cartilage :



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27. Intercalated discs :



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28. Haemoglobin :



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29. Ciliated Epithelium :



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30. Stratified Epithelium :



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31. Setae :



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32. Typhlosole :



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33. Gizzard :



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34. Caecum :



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35. Malpighian Tubules



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36. Compound eyes :



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37. Conglobate Gland



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38. Collateral gland



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39. Sinus venosus :



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40. Cloaca :



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Section D Textual Exercise

1. Give the common name of *Periplaneta americana*.



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2. How many spermathecae are found in earthworm ?



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3. What is the position of ovaries in cockroach ?



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4. How many segments are present in the abdomen of cockroach ?



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5. Malpighian Tubules



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6. What is the function of nephridia



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7. How many types of nephridia are found in earthworm based on their location ?



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8. Draw a labelled diagram of the reproductive organs of an earthworm



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9. Draw a labelled diagram of alimentary canal of a cockroach.



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10. Distinguish between the followings. (a)
Prostomium and peristomium



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11. Distinguish between the followings Septal nephridium and pharyngeal nephridium



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12. What are the cellular components of blood



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13. What are the following and where do you find them in animal body. (a) Chondrocytes



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14. What are the following and where do you find them in animal body. (B)Axons :



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15. What are the following and where do you find them in animal body.

(C) Ciliated epithelium :



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16. Describe various types of epithelial tissues with the help of labelled diagrams.



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17. Simple Epithelium and Compound Epithelium



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18. Distinguish between

Cardiac muscle and striated muscle



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19. Distinguish between

Dense regular and dense irregular connective
tissues



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20. Distinguish between

Adipose and blood tissue



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21. Distinguish between

Simple gland and compound gland



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22. Areolar tissue, blood, neuron, tendon.



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23. RBC, WBC, platelets, cartilage.



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24. Exocrine, endocrine, salivary gland,
ligament.



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25. Maxilla, mandible, labrum, antennae



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26. Pronotum, mesothorax, metathorax, coxa.



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**27. Match the terms in column I with those in
column II**

Column I		Column II	
(a)	Compound epithelium	(i)	Alimentary canal
(b)	Compound eye	(ii)	Cockroach
(c)	Septal nephridia	(iii)	Skin
(d)	Open circulatory system	(iv)	Mosaic vision
(e)	Typhlosole	(v)	Earthworm
(f)	Osteocytes	(vi)	Phallomere
(g)	Genitalia	(vii)	Bone



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28. Mention briefly about the circulatory system of earthworm.



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29. Draw a neat diagram of digestive system of frog.



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30. Mention the function of the following.

Ureters in frog.



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31. Mention the function of the following.

Malpighian tubules.



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32. Mention the function of the following.

Body wall in earthworm.



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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

A. Cuboidal epithelium

B. Columnar epithelium

C. Squamous epithelium

D. Stratified epithelium

Answer: C



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2. Which one of the following categories does adipose tissue belong ?

- (A) Epithelial
- (B) Connective
- (C) Muscular
- (D) Neural

A. Epithelial

B. Connective

C. Muscular

D. Neural

Answer: B



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

(A) Bone

(B) Cartilage

(C) Blood

(D) Muscles

A. Bone

B. Cartilage

C. Blood

D. Muscles

Answer: D



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4. The clitellum is a distinct part in the body of earthworm, it is found in

(A) Segment 13 - 14 - 15

(B) Segment 14 - 15 - 16

(C) Segment 12 - 13 - 14

(D) Segment 15 - 16 - 17

A. Segment 13 14 - 15

B. Segment 14 15 - 16

C. Segment 12 13 - 14

D. Segment 15 16 - 17

Answer: B



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

They are present in

- (A) 1st segment
- (B) Last segment
- (C) Clitellar segment
- (D) 20th – 22nd segment

A. 1st segment

B. Last segment

C. Clitellar segment

D. 20th – 22nd segment

Answer: D



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6. Which one of the following statements 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

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



7. Match the followings and choose the correct option.

Column - I		Column - II	
(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 - vi)

B. (a - iv), (b - iii), (c - i), (d - ii)

C. (C) (a - iii), (b - i), (c - iv), (d - ii)

D. (a - ii), (b - i), (c - iv), (d - iii)

Answer: B



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8. Match the followings and choose the correct answer.

Column - I		Column - II	
(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)

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

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)

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: A



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10. Match the followings and choose the correct answer.

Column - I		Column - II	
(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)

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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Section E Solution Of Ncert Exemplar Very Short Answer Type Questions

1. State the number of segments in earthworm which are covered by a prominent dark band or clitellum



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2. Where are sclerites present in cockroach ?



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3. How many times do nymphs moult to reach the adult form of cockroach ?



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4. Identify the sex of a frog in which sound producing vocal sacs are present.



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5. Name the process by which a tadpole develop into an adult frog.



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6. What is the scientific term given to earthworm's body segments



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7. A muscle fibre tapers at both ends and does not show striations. Name the muscle fibre



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8. Name the different cell junctions found in tissues.



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9. Give two identifying features of an adult male frog.



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10. Which mouth part of cockroach is comparable to our tongue ?



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11. The digestive system of frog is made of the following parts. Arrange them in an order beginning from mouth. Mouth, oesophagus,

buccal cavity, stomach, intestine, cloaca,
rectum, cloacal aperture



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12. What is the difference between cutaneous
and pulmonary respiration ?



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13. Special venous connection between liver
and intestine and between kidney and

intestine is found in frog, what are they called ?



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Section E Solution Of Ncert Exemplar Short Answer Type Questions

1. Give the location of hepatic caeca in a cockroach. What is their function ?



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2. Frogs are beneficial for mankind, justify the statement.



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3. The body of sponges does not possess tissue level of organisation though it is made of thousands of cells. Comment



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4. Structural organisation in animals attains different levels as cell-organ-organ system. What is missing in this chain ? Mention the significance of such an organisation.



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5. Stratified epithelial cells have limited role in secretion. Justify their role in our skin.



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6. How does a gap junction facilitate intercellular communication ?



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7. Why are blood, bone and cartilage called connective tissue ?



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8. Why are neurons called excitable cells ?

Mention special features of the membrane of the neuron.



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9. Earthworm is known as farmer's friend.



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10. How do you distinguish between dorsal and ventral surface of the body of earthworm.



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11. Correct the wrong statements among the following :

(a) In earthworm, a single male genital pore is present.

(b) Setae help in locomotion of earthworm.

(c) Muscular layer in the body wall of

earthworm is made up of only circular muscles.

(d) Typhlosole is the part of intestine of earthworm.



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12. Why nephridia in earthworm that are basically similar in structure classified into three types ? Mention the names of each.



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13. Common name of some animals are given in Column I, write their scientific name in Column II

Column-I		Column-II
(A)	Tiger
(B)	Peacock
(C)	Housefly



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14. Complete the following statement :

(a) In cockroach grinding of food particle is

performed by

(b) Malpighian tubules help in removal of.....

(c) Hind gut of cockroach is differentiated into

(d) In cockroach blood vessels open into spaces called



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15. Mention special features of eye in cockroach. Discuss compound eye in arthropods and mention its structural features.



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16. Frog is a poikilotherm, exhibits camouflage and undergoes aestivation and hibernation, how are all these beneficial to it ?



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17. Write the functions in brief in column II, appropriate to the structures given in column

I.

Column-I		Column-II	
(A)	Nictitating membrane	(1)
(B)	Tympanum	(2)
(C)	Copulatory pad	(3)



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18. Write the appropriate type of tissues in column II according to the functions mentioned in column I.

Column-I		Column-II	
(A)	Secretion and absorption	(1)
(B)	Protective covering	(2)
(C)	Linking and supporting framework	(3)



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19. Using appropriate examples, differentiate between false and true body segmentation.



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20. What is special about tissue present in the heart ?



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Section E Solution Of Ncert Exemplar Long Answer Type Questions

1. Classify and describe epithelial tissue on the basis of structural modifications of cells.



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2. Write down the common features of the connective tissue. On the basis of structure and function. Differentiate between bones and cartilages.



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3. Comment upon the gametic exchange in earthworm during mating. Discuss the physiology in reproduction of earthworm.



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4. Explain the digestive system of cockroach with the help of a labelled sketch.



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5. Draw a neat and well labelled diagram of male reproductive system of a frog.



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Questions From Module Important Mcq For Neet

1. In female cockroach's genital pouch, which of the following structures does not open ?

(A) One central oviduct

(B) Spermatheca

(C) A pair of anal cerci

(D) A pair of collateral glands

A. One central oviduct

B. Spermatheca

C. A pair of anal cercus

D. A pair of collateral glands

Answer: C



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2. In which part of reproduction system of male cockroach are sperm cells stored

(A) Testis

(B) Vas deferens

(C) Seminal vesicle

(D) mushroom gland

A. Testis

B. Vas deferens

C. Seminal vesicle

D. umbrellas gland

Answer: C



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3. Which characteristic is not of Americana Periplaneta ?

- (A) Exoskeleton is made up of N-acetyl glucosamine.
- (B) It possesses segmented structure.
- (C) Coelom I body cavity is small coelom.
- (D) During embryo development, radial and irregular division occurs.

- A. Exoskeleton is made up of N-acetyl glucoamine.
- B. It possesses segmented structure.
- C. Coelom I body cavity is small coelom.
- D. During embryo development, radial and irregular division occurs.

Answer: D



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4. Which is the sound - sensory organ in cockroach ?

(A) Caudal style

(B) Antennae

(C) Compound eyes

(D) Anal cercus

A. Caudal style

B. Antennae

C. Compound eyes

D. Anal cercus

Answer: D



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5. How does air enter into animal body during respiration in *Periplaneta Americana* ?

A. O_2 spreads by diffusion from spiracle of lower thoracic region trachea, tracheal tubes cells.

B. O_2 enters in mouth, tracheal tubes and cells of trachea.

C. Oxygen is released in spiracle of lower thoracic region, tracheal tubes and cells of tracheal tubes.

D. In sub pharyngeal mouth, pharynx, tracheal tubes, tissues.

Answer: A



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Questions From Module Question Paper

1. What is vermicasting



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2. By what name the first segment of earthworm is known ?



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3. Give the location of genital pouch in female cockroach.



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4. What is meant by chyme



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5. What is included in fore brain of frog



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6. Give names of various cells present in areolar tissue ?



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7. Squamous Epithelium :



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8. Describe cardiac muscle tissue



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9. Describe structure of reproductive system of earthworm with diagram.



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10. Describe sensory organs of frog.



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11. Describe reproductive system of female cockroach and process of fertilization with diagram



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