



## BIOLOGY

### BOOKS - CENGAGE BIOLOGY (HINGLISH)

### STRUCTURAL ORGANISATION IN ANIMALS

#### Exercise

1. Epithelial tissues lie on the basement membrane. It is made up of
  - A. Basal lamina composed of mucopolysaccharides and glycoproteins secreted by epithelial cells
  - B. Fibrous lamina composed of collagen and reticular fibers of underlying connective tissue
  - C. Both (1) and (2)
  - D. Cellular layer

**Answer: C**



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**2. Simple epithelium is not effective in**

- A. Nutrition
- B. Excretion
- C. Secretion
- D. Protecting the underlying tissues

**Answer: D**



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**3. Which of the following epithelia forms the inner lining of lung alveoli, blood vessels and peritoneum of body cavity ?**

A. Cuboidal

B. Squamous

C. Columnar

D. Ciliated columnar

**Answer: B**



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4. Which of the following mammalian tissues is associated with filtration and diffusion?

A. Simple columnar

B. Simple squamous

C. Stratified squamous

D. Stratified columnar

**Answer: B**

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5. Simple squamous epithelium lining the blood vessels is called

- A. Mesothelium
- B. Endothelium
- C. Pavement epithelium
- D. Tessellated epithelium

**Answer: B**

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6. Ciliated columnar epithelium called ependyma is present in the lining of

- A. Fallopian tubes
- B. Ventricles of brain

C. Nasal passage

D. Bronchioles

**Answer: B**



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7. Brush-bordered cuboidal epithelium is present in

A. Intestine

B. Proximal convoluted tubule

C. Stomach

D. Gall bladder

**Answer: B**



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8. Ciliated epithelium lines

- A. Stomach
- B. Trachea and bronchi
- C. Duodenum
- D. Ileum

**Answer: B**



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9. Germinal epithelium of testis and ovary is made up of

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

**Answer: C**



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**10.** All the statements about stereocilia are correct except

- A. They are non-motile
- B. These are found in epididymis and vas deferens
- C. It has 9 + 2 ultra structure
- D. The basal granule is absent

**Answer: C**



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**11.** Which of the following epithelia covers the inner linings of trachea, large bronchi, and helps to remove mucus?

- A. Ciliated columnar
- B. Pseudo-stratified epithelium
- C. Compound epithelium
- D. Cuboidal epithelium

**Answer: B**

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**12.** The epithelium found in the lining layer of stomach and intestine is

- A. Columnar
- B. Squamous
- C. Stratified
- D. Pseudostratified

**Answer: A**

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13. Adjacent epithelial cells are held together by means of

- A. Liposomes
- B. Liposomes
- C. Desmosomes
- D. Microsomes

**Answer: C**



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14. Pavement epithelium is the name of

- A. Cuboidal epithelium
- B. Squamous epithelium
- C. Columnar epithelium

D. Ciliated epithelium

**Answer: B**



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15. Pseudostratified non-ciliated columnar epithelial tissue is found in the

A. Urethra of male and parotid salivary gland

B. Trachea and large bronchi

C. Vas deferens and epididymis

D. Buccopharyngeal cavity and oviduct

**Answer: A**



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16. Stratified squamous non-keratinized epithelium is present in the lining of

- A. Buccal cavity, oesophagus, cornea of eye
- B. Skin, hair, horn, nail
- C. Small pancreatic ducts, thyroid follicles, ovary
- D. Intestine, stomach, gall bladder

**Answer: A**



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17. Which of the following epithelia is much thinner and more stretchable than the stratified epithelium and covers the inner surface of urinary bladder and ureter?

- A. Transitional
- B. Compound

C. Simple

D. Stratified

**Answer: A**



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**18.** Which of the following cells are specialized for sensory functions, as cells of taste bud?

A. Myoepithelial

B. Neuroepithelial

C. Cuboidal

D. Cornified

**Answer: B**



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19. Cells of Peritoneum comprise : -

- A. Ciliated epithelium
- B. Columnar epithelium
- C. Glandular epithelium
- D. Squamous epithelium

**Answer: D**



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20. Which of the following match is incorrect ?

- A. Holocrine-Sebaceous
- B. Merocrine-Pancreas
- C. Apocrine-Mammary glands
- D. Eccrine ( merocrine )-Mammary gland

**Answer: D**



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**21.** Human mammary glands belong to one of the following types of glands

- A. Simple alveolar
- B. Coiled tubular
- C. Compound tubule-alveolar
- D. Simple tubular

**Answer: C**



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**22.** Apocrine secretion of gland means

- A. When the product is released but cell remains intact
- B. When the entire contents of cell are discharged with the destruction of the cell
- C. When a part of apical cytoplasm is lost
- D. None of these

**Answer: C**



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**23.** Which of the following tissues is present in maximum amount, joins different tissues, forms the packing between them and helps to keep the organs in place and normal shape ?

- A. Areolar
- B. Adipose
- C. Tendon
- D. Ligament

**Answer: A**



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**24. Epithelium covering in tongue is**

- A. Pseudostratified
- B. Squamous keratinized
- C. Squamous non-keratinized
- D. Simple cuboidal

**Answer: C**



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**25. Which of the following are principal cells of areolar connective tissue and secrete maximum amount of matrix?**



A. Macrophage

B. Mast

C. Fibroblast

D. Histiocyte

**Answer: C**



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

A. Striated muscle

B. Areolar tissue

C. Stratified epithelium

D. Myelinated nerve fibers

**Answer: B**



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27. Mast cells occur in

- A. Adipose tissue
- B. Yellow fibrous tissue
- C. Areolar tissue
- D. White fibrous tissue

**Answer: C**



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28. Areolar tissue connects

- A. Muscles with muscles
- B. Bone with muscles
- C. Skin with muscles

D. Bone with bone

**Answer: C**



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**29.** Heparin, histamine, and serotonin are secreted by

A. Lymphoid cells

B. Mast cells

C. Fibroblasts

D. Macrophages

**Answer: B**



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**30.** Colloidal protein gelatin is obtained by boiling

- A. Collagen
- B. Elastin
- C. Both (1) and (2)
- D. None of these

**Answer: A**

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**31. Fibers present in connective tissue are**

- A. Reticular
- B. Elastic
- C. Collagen
- D. All of these

**Answer: D**

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32. A new born baby has the cold-resisting device due to

- A. Brown fat
- B. Adipose fat
- C. Fat rich in reticular tissue
- D. None of these

**Answer: A**



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33. Which of the following tissues is present at the joints between skull bones and makes them immovable?

- A. Cartilage
- B. White fibrous connective tissue
- C. Ligament

D. Areolar

**Answer: B**



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**34.** Nucleus pulposus occurs in

A. Intervertebral disc

B. Kidney

C. Testis

D. Cartilage

**Answer: A**



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35. Which of the following tissues connects bones at joints and enables us to move and rotate our neck, limbs, and fingers comfortably

- A. Tendon
- B. Cartilage
- C. Ligament
- D. White fibrous cartilage

**Answer: C**



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36. Sprain is caused by

- A. Excessive pulling of tendons
- B. Excessive pulling of muscles
- C. Excessive pulling of ligaments in which some fibers of supporting ligaments are ruptured

D. Too much stretching and tearing of all ligaments

**Answer: C**



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**37.** The connective tissue which mainly consists of yellow elastic fibers and binds the bones together is known as

A. Ligament

B. Tendon

C. Reticular fibers

D. None of these

**Answer: A**



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**38.** All the following statements are correct, except

- A. Hyaline cartilage lacks fibers and is present in sternum, hyoid, and ribs.
- B. White fibrous cartilage is the strongest and is present in intervertebral discs.
- C. Elastic cartilage is present in the tip of nose and ear pinna.
- D. Calcified cartilage is not present in the pubis of pelvic girdle of frog

**Answer: D**



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**39.** Hyaline cartilage is found in

- A. Eustachian tube, epiglottis, and pinna
- B. Larynx, nasal septum, tracheal rings, and ribs

C. Joints between vertebrae

D. Between the rows of chondrocytes in lacunae

**Answer: B**



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**40.** Bone-forming cells which secrete ossein protein are called

A. Chondroblasts

B. Chondrocytes

C. Osteoblasts

D. Osteocytes

**Answer: C**



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**41.** The bone matrix consists of

- A. 65% inorganic matter and 35% organic matter
- B. 30% inorganic matter and 70% organic matter
- C. 60% inorganic matter and 40% organic matter
- D. 40% inorganic matter and 60% organic matter

**Answer: A**



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**42.** Protein present in cartilage is

- A. Ossein
- B. Chondrin
- C. Myosin
- D. Elastin

**Answer: B**



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**43.** Which salt predominates in bone matrix

- A. Sodium chloride
- B. Magnesium phosphate
- C. Calcium carbonate
- D. Calcium phosphate

**Answer: D**



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**44.** A bone kept in dil HCl for three days shall

- A. Breaks into pieces

B. Becomes soft and elastic

C. Dissolves

D. Remains unchanged

**Answer: B**



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**45.** Transverse canal that joins longitudinal Haversian canals is known as Volkmann's canal. It is a characteristic feature of the bone of

A. Frog

B. Fish

C. Toad

D. Rabbit

**Answer: D**



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46. In mammals Haversian canals are connected with each other by transverse canals, which are called

- A. Canaliculi
- B. Volkmann's canal
- C. Trabeculae
- D. Bidder's canal

**Answer: B**



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47. Spongy or cancellous bone is present in vertebrae, ribs, skull, and epiphysis of long bones. They have

- A. Haversian canals
- B. Trabeculae

C. Red bone marrow

D. Both (2) and (3)

**Answer: D**



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**48.** RBCs of mammals are

A. Non-nucleated, biconcave and circular

B. Nucleated, biconvex, oval

C. Non-nucleated, biconvex, oval

D. Non-nucleated, biconvex, circular

**Answer: A**



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49. Which of the following are incorrect?

- A. Increase in RBC count is polycythemia.
- B. Decrease in leukocyte count is called leukopenia.
- C. Decrease in thrombocyte count is called thrombocytopenia.
- D. Purpura (a group of bleeding disorders) is due to increase in platelet count.

**Answer: D**



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50. Which of the following precipitates  $Ca^{2+}$  ions and consequently prevents coagulation?

- A. Heparin
- B. Thrombin
- C. Potassium oxalate/Sodium citrate



D. Antithrombin

**Answer: C**



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**51. Erythropoiesis in the fetus occurs in**

A. Spleen

B. Liver

C. Both (1) and (2)

D. Bone marrow

**Answer: C**



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**52. Anemia is caused due to the deficiency of**

- A. Folic acid
- B. Vitamin  $B_{12}$
- C. Hemoglobin
- D. All of these

**Answer: D**

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**53.** An abnormal rise in RBC count can be found during exercise and at high altitude to cope with the oxygen demand is known as

- A. Polycythemia
- B. Thrombosis
- C. Leukemia
- D. Angina pectoris

**Answer: A**

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54. Which of the following is not an anticoagulant?

- A. Histamine
- B. Hirudin
- C. Heparin
- D. Citrate

**Answer: A**

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55. Old RBCs are destroyed in "tissue macrophage system." In the breakdown of hemoglobin, bilirubin is formed from

- A. Globin part
- B. Porphyrin

C. Mainly from globin and a part from heme

D. Iron part

**Answer: B**



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**56.** Kidney-shaped nucleus occurs in

A. Neutrophils

B. Monocytes

C. Lymphocytes

D. Eosmophils

**Answer: B**



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57. Which one of the following act as soldiers in human body?

- A. Monocytes
- B. Lymphocytes
- C. Erythrocytes
- D. All of these

**Answer: A**



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58. The maximum number of WBCs in the body is

- A. Eosinophils
- B. Basophils
- C. Monocytes
- D. Neutrophils

**Answer: D**



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**59.** Cardiac muscles are

- A. Striated, voluntary with syncytial condition
- B. Unstriated, involuntary, uninucleated
- C. Striated, involuntary with intercalated disc
- D. Involuntary and unstriated

**Answer: C**



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**60.** Where would you find oblique cross connections forming a contractile network of fibers and intercalated discs?

- A. Voluntary muscles
- B. Cardiac muscles
- C. Involuntary muscles
- D. None of these

**Answer: B**

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**61.** Covering membrane around muscle fiber is known as

- A. Neurilemna
- B. Plasmalemna
- C. Sarcolemna
- D. Myolemma

**Answer: C**

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62. Long refractory period is present in

- A. Smooth muscles
- B. Cardiac muscles
- C. Striated muscles
- D. None of these

**Answer: B**



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63. Erector pili muscles are

- A. Voluntary, multiunit
- B. Involuntary, multiunit
- C. Involuntary, single unit



D. Voluntary, single unit

**Answer: B**



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**64.** Diapedesis means

A. Movement of the food in gut

B. Formation of WBCs

C. The process by which monocytes and neutrophils squeeze through thin capillary wall

D. Formation of RBCs

**Answer: C**



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65. Krause membrane or Z- line is a myofibril which separates two adjacent

- A. A band or anisotropic band
- B. Henson's line
- C. I band or isotropic band
- D. Sarcomere

**Answer: C**



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66. Nissl granules are made up of

- A. Ribosomes and RNA
- B. DNA and proteins
- C. Ribosomes and DNA
- D. RNA, DNA, and proteins

**Answer: A**



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**67.** In the central nervous system, the myelin sheath around the nerve fiber is formed by the spiral wrapping of

- A. Neurilemma
- B. Schwann cells
- C. Oligodendrocytes
- D. Neurolemmocytes

**Answer: C**



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**68.** Blood brain barrier is formed by

- A. Astrocytes
- B. Oligodendrocytes
- C. Glial cells
- D. Microglial cells

**Answer: A**

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**69.** Neuroglia cell consists of packing cells and occur in

- A. Brain
- B. Spinal cord
- C. Ganglia
- D. All of these

**Answer: D**

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70. A nerve is a bundle of

- A. Ganglia
- B. Dendrites
- C. Synapse
- D. Axons

**Answer: D**



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71. Compound squamous epithelium occurs in

- A. Stomach
- B. Pharynx
- C. Intestine

D. Trachea

**Answer: B**



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72. Epithelial tissue is

- A. Protective covering
- B. Reproductive structure
- C. Nerve cells
- D. Corpuscles

**Answer: A**



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73. The epithelium of respiratory bronchioles is : —

- A. Simple cuboidal
- B. Pseudostratified columnar
- C. Simple squamous
- D. Pseudostratified sensory

**Answer: C**

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**74.** Stratified and non-keratinised squamous epithelium occurs in

- A. Epidermis of skin
- B. Vagina and cervix
- C. Buccal cavity
- D. Both (2) and (3)

**Answer: D**

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75. Inner lining of gut , stomach and liver is made of

- A. Simple squamous epithelium
- B. Simple columnar epithelium
- C. Simple cuboidal epithelium
- D. All the above

**Answer: B**



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76. Gastric glands are

- A. Simple tubular
- B. Simple coiled tubular
- C. Branched tubular



D. Branched tubular

**Answer: C**



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**77.** Regeneration after injury is absent in

A. Nervous tissue

B. Skin epidermis

C. Tendon

D. Smooth muscles

**Answer: A**



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**78.** Adjacent epithelial cells are held together by means of

- A. Liposomes
- B. Glyoxisomes
- C. Desmosomes
- D. Microsomes

**Answer: C**

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**79.** Vertebrate salivary glands and exocrine part of pancreas are

- A. Apocrine
- B. Holocrine
- C. Epicrine
- D. Merocrine

**Answer: D**

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**80.** Mucus cells (Goblet cells) :-

- A. Unicellular glands
- B. Multicellular glands
- C. Loosely arranged cells
- D. Dead keratinized cells

**Answer: A**



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**81.** Squamous epithelium occurs in inner lining of

- A. Kidney
- B. Pancreatic duct
- C. Lung alveoli

D. Liver

**Answer: C**



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**82.** Characteristic of epithelial tissues is

- A. Never produce glands
- B. Cells can undergo rapid divisions
- C. Abundant vascularization
- D. Large intercellular spaces

**Answer: B**



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**83.** Blood platelets are present in the blood of

A. Birds

B. Reptiles

C. Mammals

D. Amphibians

**Answer: C**



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**84. Ligament connects**

A. Bone to bone

B. Bone to muscle

C. Muscle to muscle

D. Both (B) and (C)

**Answer: A**



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**85.** Mammary glands are modified

- A. Sweat gland
- B. Sebaceous gland
- C. Lacrymal gland
- D. Endocrine gland

**Answer: A**



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**86.** The term hematocrit means

- A. The percentage of blood having red blood cells
- B. The ratio of blood volume to extracellular space
- C. The percentage of new blood cells formed every 120 days

D. The percentage of blood having white blood cells

**Answer: A**



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**87.** What is the main difference in human and frog RBCs?

- A. Human RBCs are non-nucleated.
- B. Hemoglobin is found only in human RBCs.
- C. Human RBCs have nucleus.
- D. Human RBCs are multinucleated.

**Answer: A**



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**88.** Prothrombin is found in : —

A. Intestine and helps in cellulose digestion

B. Liver and helps in the production of bile

C. Blood and gives red color

D. Blood and helps in blood clotting

**Answer: D**



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**89.** Which type of WBCs are most abundant in the blood of rabbit and other vertebrates?

A. Acidophils

B. Basophils

C. Lymphocytes

D. Neutrophils

**Answer: D**



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90. Blood clotting can be prevented in a test tube by adding a little

- A. Sodium oxalate
- B. Sodium chloride
- C. Sodium hydroxide
- D. Ammonium chloride

**Answer: A**

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91. Oval, biconvex and nucleated RBC's are found in

- A. Camel
- B. Rabbit
- C. Man

D. Rat

**Answer: A**



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92. Which of the following is an anticoagulant and checks blood coagulation in blood vessels?

A. Prothrombin

B. Globulin

C. Thromboplastin

D. Heparin

**Answer: D**



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93. In normal healthy female, the number of RBC /  $mm^3$  of blood is :

- A. 6.5-7.0 million
- B. 5.5-6.0 million
- C. 4.5-5.0 million
- D. 3.5-4.0 million

**Answer: C**



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94. Tissue which form the basic structure of lymphoid organs , spleen etc,  
is :

- A. Lymphoid tissue
- B. Cartilage tissue
- C. Elastic tissue
- D. Areolar tissue

**Answer: A**



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**95.** Which of the following should be avoided in biological marriages ?

A. A+ boy and A+ girl

B. A+ boy and A- girl

C. O+ boy and O+ girl

D. O-boy and O- girl

**Answer: B**



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**96.** After examining the blood group of husband and wife ,the doctor advised them not to have more than one child ,the blood group of the couple are likely to be :

- A. Male Rh- and male Rh+
- B. Female Rh- and male Rh+
- C. Male Rh+ and female Rh+
- D. Male Rh- and female Rh-

**Answer: B**

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**97.** Blood colloidal osmotic pressure mainly maintained by which plasma protein : —

- A. Albumin
- B. Globulin
- C. Fibrinogen
- D. Thrombin

**Answer: A**

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98. Haversian canal is situated in

- A. Glandular connective tissue
- B. Skeletal connective tissue
- C. Fibrous connective tissue
- D. Nervous tissue

**Answer: B**

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99. Histamine is secreted by

- A. Neutrophils
- B. Basophils
- C. Leukocytes

D. Monocytes

**Answer: B**



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**100.** Which of the following is an agranulocyte ?

A. Neutrophil

B. Eosinophil

C. Basophil

D. Monocyte

**Answer: D**



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**101.** Stratified squamous epithelium is found in :

A. Pharynx

B. Trachea

C. Ileum

D. Bowman's capsule

**Answer: A**



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**102.** During the process of blood coagulation, vitamin K helps in

A. Formation of thromboplastin

B. Formation of prothrombin

C. Conversion of prothrombin to thrombin

D. Conversion of fibrinogen to fibrin

**Answer: B**



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**103.** In mature RBC, nucleus is present in

- A. Frog
- B. Rabbit
- C. Both 1 and 2
- D. Neither in frog nor in rabbit

**Answer: A**



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**104.** ABO blood group system is give by :

- A. Landsteiner
- B. Wallace
- C. de Vries

D. Lamarck

**Answer: A**



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**105.** Which of the following , does not help in clotting of blood ?

A. Heparin

B. Prothrombin

C.  $Ca^{2+}$

D. Exposure to  $O_2$

**Answer: A**



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**106.** Collagen fibres are secreted by

- A. Mast cells
- B. Macrophage
- C. Histiocytes
- D. Fibroblasts

**Answer: D**

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**107.** Haversian canal is found in the bone of :

- A. Mammals
- B. Reptiles
- C. Aves
- D. Pisces

**Answer: A**

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**108.** Haematocrit value gives :

- A. Amount of RBC in blood
- B. Number of WBC in blood
- C. Amount of plasma in blood
- D. Hemoglobin concentration in blood

**Answer: A**



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**109.** Universal blood recipient is

- A. Blood group O
- B. Blood group AB
- C. Blood group A

D. Blood group B

**Answer: B**



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**110.** Ligament is mainly formed by

A. Reticulin

B. Elastin

C. Myosin

D. Collagen

**Answer: B**



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**111.** Which is a sesamoid bone ?

A. Patella

B. Femur

C. Ulna

D. Pterygoid

**Answer: A**



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**112. Mammary glands are modified**

A. Sweat glands

B. Sebaceous glands

C. Cutaneous glands

D. Scent glands

**Answer: A**



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**113.** Anemia disease is caused by

- A. Deficiency of Fe
- B. Deficiency of Na
- C. Deficiency of Ca
- D. Deficiency of Mg

**Answer: A**



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**114.** The main function of ligament is :

- A. Joining of two bones
- B. Joining of muscles
- C. Joining of muscle to bone

D. Joining of muscle to nerves

**Answer: A**



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**115.** The following are needed for blood -clotting in mammals

A.  $Ca^{++}$  and vitamin E

B.  $Ca^{++}$  and vitamin K

C.  $Ca^{++}$  and vitamin A

D.  $K^+$  and vitamin K

**Answer: B**



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**116.** The type of epithelium found in conjunctiva of eye is



- A. Stratified cuboidal
- B. Stratified columnar
- C. Stratified squamous
- D. Transitional epithelium

**Answer: A**

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**117.** Haversian canals are found in the :

- A. Bones of birds
- B. Bones of mammals
- C. Bones of frog
- D. Cartilage

**Answer: B**

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**118.** One of the following is not found in the red blood co. puscles of human being

A. Haemoglobin

B. Plasmalemma

C. Nucleus

D. Cytoplasm

**Answer: C**



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**119.** Average life span of human RBC is

A. 120 days

B. 90 days

C. 2-3days

D. 20 days

**Answer: A**



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**120.** Volkmann canals are found in

- A. Bones of birds
- B. Bones of amphibians
- C. Bones of mammals
- D. Cartilage of mammals

**Answer: C**



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**121.** An example of merocrine gland is

A. Sebaceous gland

B. Pineal gland

C. Salivary gland

D. Mammary gland

**Answer: C**

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**122.** Bone formed by ossification of tendon is

A. Membrane bone

B. Sesamoid bone

C. Dermal bone

D. Cartilage

**Answer: B**

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**123.** Epithelial tissue are arise from :

- A. Ectoderm
- B. Endoderm
- C. Mesoderm
- D. All the above

**Answer: D**



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**124.** The percentage of Hb in RBC is :

- A. 0.48
- B. 0.34
- C. 0.1

D. 0.2

**Answer: B**



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**125.** White adipose tissue contains :

A. Multilocular fat cells

B. Bilocular fat cells

C. Unilocular fat cells

D. Alocular fat cells

**Answer: C**



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**126.** In human fibrous cartilage is found abundantly

A. Hyaline cartilage of joints

B. Nostrils

C. Intervertebral discs

D. External ear

**Answer: C**

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**127.** Which of the following is enucleate

A. Squamous epithelial cell

B. Mature human erythrocyte

C. Mature human leukocyte

D. Mature frog erythrocyte

**Answer: B**

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128. Which one of the following anticoagulant is added in blood during storage ?

- A. Sodium carbonate
- B. Sodium oxalate
- C. Sodium chloride
- D. Sodium hydroxide

**Answer: B**



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129. Blood clotting requires

- A.  $Na^+$  and  $K^+$
- B.  $Na^+$  and Prothrombin
- C.  $Na^+$  and thromboplastin



D.  $Ca^{+}$  and throboplastin

**Answer: D**



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**130.** Mammalian pinna is supported by

- A. Hyaline cartilage
- B. Calcified cartilage
- C. Elastic cartilage
- D. White fibrous connective tissue

**Answer: C**



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**131.** Bone marrow takes part in

A. Controlling blood pressure

B. As hemopoietic tissue

C. Assisting kidneys

D. Assisting liver

**Answer: B**



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**132. Agranulocytes are**

A. Eosinophils and neutrophils

B. Monocytes and lymphocytes

C. Eosinophils and lymphocytes

D. Lymphocytes and basophils

**Answer: B**



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**133.** Platelets are a source of

- A. Fibrinoge
- B. Calcium
- C. Thromboplastin
- D. Hemoglobin

**Answer: B**



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**134.** Which is unrelated to blood coagulation ?

- A. Fibrinogen
- B. Fibrin
- C. Bilirubin

D. Calcium

**Answer: C**



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**135.** Major component of blood plasma is

A. Water

B. Inorganic Substances

C. Organic substances

D. Blood cells

**Answer: A**



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**136.** Connective tissue belongs to

A. Ectoderm

B. Mesoderm

C. Endoderm

D. Any of the above

**Answer: B**



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**137. Which one is unrelated ?**

A. Keratin

B. Elastin

C. Dextrin

D. Collagen

**Answer: C**



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**138.** Thromboplastin required for blood clotting is produced by

- A. Platelets
- B. Erythrocytes
- C. Monocytes
- D. Lymphocytes

**Answer: A**



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**139.** Maximum number of white blood corpuscles is that of

- A. Basophils
- B. Neutrophils
- C. Monocytes

D. Eosinophils

**Answer: B**



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**140.** Protein present in cartilage is

A. Cartilagin

B. Chondrin

C. Ossein

D. Ossein

**Answer: B**



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**141.** Which of the following are involved in body defence ?

- A. Neutrophils
- B. Lymphocytes
- C. Macrophages
- D. All the above

**Answer: D**

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**142.** Largest corpuscles in human blood are

- A. Erythrocytes
- B. Monocytes
- C. Lymphocytes
- D. Basophils

**Answer: B**

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**143.** Heparin is formed by

- A. Liver cells
- B. Plasma cells
- C. Blood cells
- D. Spleen cells

**Answer: A**



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**144.** Prothrombin , albumin and fibrinogen are synthesised by

- A. Pancreas
- B. Bone marrow
- C. Spleen

D. Liver

**Answer: D**



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**145.** Mast cells occur in

A. Connective tissue

B. Epithelial tissue

C. Skeletal tissue

D. Nervous tissue

**Answer: A**



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**146.** Ground substance of connective tissue is formed of

A. Phospholipids

B. Lipids

C. Monosaccharides

D. Mucopolysaccharides

**Answer: D**



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**147.** Ends of long bones are covered with

A. Blood cells

B. Ligaments

C. Muscles

D. Cartilage

**Answer: D**



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**148.** Erythrocytes of adult mammals are formed in

- A. Spleen
- B. Liver
- C. Bone marrow
- D. Kidney

**Answer: C**



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**149.** Blood leukocytes are

- A. Epithelial
- B. Endothelial
- C. Glandular

D. Connective

**Answer: D**



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**150.** Antibodies are:

A. Albumins

B. Gamma-globulins

C. Sucrose

D. Vitamin C

**Answer: B**



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**151.** In which state iron is present in haemoglobin.

A. Anionic

B.  $Fe^{2+}$

C.  $Fe^{3+}$

D. None of these

**Answer: B**



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**152.** The cavities of brain are lined by

A. Cuboidal cells

B. Polygonal cells

C. Ependymal cells

D. Simple squamous cells

**Answer: C**



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**153.** Immature RBCs fo mammals have

- A. No nucleus
- B. Single beaded nucleus
- C. Many nuclei
- D. Single nucleus

**Answer: A**



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**154.** Megakaryocytes

- A. Produce leukocytes
- B. Forms blood platelets
- C. Are carriers of oxygen

D. Are carriers of oxygen

**Answer: B**



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**155.** During blood clotting , fibrin is produced by

A. Thrombokinase

B. Prothrombin

C. Liver

D. Proteolysis

**Answer: B**



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**156.** Cartilage present in trachea , larynx and bronchi is



- A. Fibrous
- B. Elastic
- C. Hyaline
- D. Calcified

**Answer: C**



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**157.** Number of erythrocytes per  $mm^2$  of human blood is

- A. 4 million
- B. 5 million
- C. 6 million
- D. 0.5 million

**Answer: B**



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**158.** Number of WBCs per  $mm^3$  of human blood is ideally

A. 8000

B. 7000

C. 6500

D. 6000

**Answer: A**



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**159.** RBCs are nucleated in

A. Man

B. Rabbit

C. Rat

D. Frog

**Answer: D**



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**160.** Cartilage is

- A. Non-vascular
- B. Poorly vascular
- C. Highly vascular
- D. Irregularly vascular

**Answer: A**



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**161.** An anticoagulant is

A. Heparin

B. Hirudin

C. EDTA

D. All the above

**Answer: D**

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**162.** Collagen and elastin are formed by

A. Macrophages

B. Fibroblasts

C. Mast cells

D. Chondrocytes

**Answer: B**

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**163.** The rarest leucocyte of human blood is

- A. Basophil
- B. Monocyte
- C. Neutrophil
- D. Eosinophil

**Answer: A**



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**164.** Blood plasma has a pH of

- A. 7.4
- B. 7.8
- C. 6.9

D. 6.3

**Answer: A**



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**165.** In Camel, erythrocytes are

- A. Oval and nucleated
- B. Circular, biconcave and nucleated
- C. Circular, biconcave and non-nucleated
- D. Oval and non-nucleated

**Answer: A**



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**166.** Bilirubin and biliverdin are derived from

A. Globulin

B. Heme

C. Iron

D. Fat

**Answer: A**



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**167.** Protein required for coagulation of blood is

A. Hemoglobin

B. Globulin

C. Fibrinogen

D. Albumin

**Answer: C**



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**168.** Globulin is

- A. Plasma protein
- B. Antigen
- C. Serum
- D. Found in lymphatic tissue

**Answer: A**



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**169.** Which is not a component of areolar tissue ?

- A. Macrophage
- B. Plasma cell
- C. Schwann cell



D. Adipose cell

**Answer: C**



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**170.** Structure absent from fresh frozen blood plasma is

A. Immunoglobulin

B. Plasma

C. Albumin

D. Platelets

**Answer: D**



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**171.** To prevent clotting , donor's blood is treated with

A. Sodium glycocholate

B. Sodium citrate

C. Heparin

D. Sodium taurocholate

**Answer: B**

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**172.** Bones are mainly formed by

A. Calcium and magnesium

B. Calcium and phosphorus

C. Calcium and sulfur

D. Calcium and iron

**Answer: B**

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173. Abnormal increase in number of RBC in blood is called

- A. Anemia
- B. Polycythemia
- C. Leukemia
- D. Sarcoma

**Answer: B**



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174. Liquid which remain after clotting of blood is called as : —

- A. Serum
- B. Plasma
- C. Lymph

D. Blood

**Answer: A**



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**175.** Basement membrane is formed by

A. Epidermal cells

B. Endodermal cells

C. Both (1) and (2)

D. None of the above but present below epithelial cells

**Answer: D**



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**176.** Life span of human white blood corpuscles is

A. 24 h

B. Less than 10 days

C. 120 days

D. 100 h

**Answer: B**



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**177.** Which of the following is not a granulocyte

A. Lymphocyte

B. Basophil

C. Neutrophil

D. Eosinophil

**Answer: A**



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**178.** Regeneration of cartilage can occur from its

- A. Matrix
- B. Plasma
- C. Perichondrium
- D. A piece without perichondrium

**Answer: C**



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**179.** Matrix of hyaline cartilage contains

- A. Collagen
- B. Chondrin
- C. Ossein

D. All the above

**Answer: B**



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**180.** Histamine is secreted by

A. Mast cells

B. Histiocytes

C. Lymphocytes

D. Fibroblasts

**Answer: A**



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**181.** One of the factors required for the maturation of erythrocytes is

A. Vitamin  $B_{12}$

B. Vitamin A

C. Vitamin D

D. Vitamin C

**Answer: A**



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**182.** White fibrous tissue is

A. Nervous

B. Muscular

C. Ligaments

D. Tendons

**Answer: D**



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**183.** Loose connective tissue is

- A. Areolar
- B. Adipose
- C. Blood
- D. Cartilage

**Answer: A**



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**184.** Ligament is

- A. Modified white fibrous tissue
- B. Inelastic white fibrous tissue
- C. Modified elastic connective tissue

D. None of these

**Answer: B**



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**185.** Brush bordered epithelium is found in

A. Tracjea

B. Stomach

C. Small intestine

D. Fallopine tube

**Answer: C**



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**186.** Simple epithelium is made of

- A. Non-cellular layer of hyaluronic acid
- B. Actively dividing cells
- C. Loosely arranged cells
- D. Compactly packed single layer of cells.

**Answer: D**

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**187.** Sebaceous glands are

- A. Apocrine
- B. Holocrine
- C. Mesocrine
- D. Epicrine

**Answer: A**

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**188.** Ends of two long bones are 'connected' by

- A. Cartilage
- B. Muscles
- C. Ligaments
- D. Tendons

**Answer: C**



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**189.** Nasal septum gets damaged . Its recovery requires cartilage called

- A. Fibrous cartilage
- B. Elastic cartilage
- C. Hyaline cartilage

D. Calcified cartilage

**Answer: C**



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**190.** Branched tubular gland is

A. Salivary

B. Gastric

C. Sebaceous

D. Sweat

**Answer: B**



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**191.** Which cartilage is present at the end of long bones?

A. Calcified cartilage

B. Hyaline cartilage

C. Elastic cartilage

D. Fibrous cartilage

**Answer: B**



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**192.** Continuous bleeding from an injured part of body is due to deficiency of

A. Vitamin A

B. Vitamin B

C. Vitamin K

D. Vitamin E

**Answer: C**

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**193.** What will happen if ligaments are cut or broken :-

- A. Bones will move freely at joints
- B. No movement at joint
- C. Bone will become unfix
- D. Bone will become fixed

**Answer: C**

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

- A. Striated muscle
- B. Areolar tissue

C. Stratified epithelium

D. Myelinated nerve fibers

**Answer: B**



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**195.** Four healthy people in their twenties got involved in injuries resulting in damage and death of few cells of the following. Which of the cells are least likely to be replaced by new cells

A. Osteocytes

B. Liver cells

C. Neurons

D. Malpighian layer of the skin

**Answer: C**



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**196.** Which of the following substances, if introduced into the blood system, would cause coagulation of blood at the site of its introduction

- A. Thromboplastin
- B. Fibrinogen
- C. Heparin
- D. Prothrombin

**Answer: A**



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**197.** Examination of blood of a person suspected of having anaemia, shows large, immature, nucleated erythrocytes without haemoglobin. Supplementing his diet with which of the following is likely to alleviate his symptoms

- A. Thiamine

B. Folic acid and cobalamine

C. Riboflavin

D. Iron compounds

**Answer: B**



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**198.** A drop of each of the following, is placed separately on four sides.

Which of them will not coagulate ?

A. Whole blood from pulmonary vein

B. Blood plasma

C. Blood serum

D. Sample from the thoracic duct of lymphatic system

**Answer: C**



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**199.** Assertion: Cardiac muscles have striations and fiber is nucleated and involuntary.

Reason: Intercalated disc form the three-dimensional network of cardiac muscle fiber.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**200.** Assertion: Multipolar neurons have several efferent processes.

Reason: Axons are the afferent processes of a neuron.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: D**



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**201.** Assertion: Blood circulation is absent in epithelium tissue.

Reason: Blood vessels are unable to pierce basement membrane.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**202.** Assertion : Reticular fibrous connective Tissue is called as embryonic tissue.

Reason : Reticular fibrous connective tissue is mainly found in embryonic stage.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**

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**203.** Assertion : Epithelia are highly regenerative.

Reason : When epithelia gets damaged they regenerate more rapidly than other Tissue.

A. If both Assertion and Reason are true and the Reason son is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**

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**204.** Assertion: Platelets play an important role in blood clotting.

Reason: In the blood oozing from an injury, the platelets disintegrate and release thromboplastin that initiates clotting.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: A**



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**205.** Assertion : Brown fat produces more energy.

Reason : Brown fat composed of monolocular Adipocyte.

- A. If both Assertion and Reason are true and the Reason son is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**206.** Assertion : Simple cuboidal epithelium is also called as germinal epithelium



Reason : Cuboidal cells of gonads forms gametes

- A. If both Assertion and Reason are true and the Reason son is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: A**



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**207. Assertion:** Heparin is an anticoagulant found in mammals.

**Reason:** Heparin prevents the conversion of prothrombin to thrombin

- A. If both Assertion and Reason are true and the Reason son is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**

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**208.** Assertion : Epithelium cells get their nutrients from Adjacent cells .

Reason : In epithelium tissue large intercellular spaces are present

A. If both Assertion and Reason are true and the Reason son is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: D**



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**209.** Which of the following statements is not correct about earthworm?

- A. It shows metanerism and the number of segments varies from 100-120.
- B. The first segment at the anterior end of the body is called as the buccal segment or peristomium.
- C. The first segment is prostomium.
- D. The skin of earthworm is brown due to the presence of porphyrin.

**Answer: C**



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210. The earthworms move with the help of

- A. Setae, muscles, and hydrostatic skeleton
- B. Setae alone
- C. Muscles alone
- D. Parapodia

**Answer: A**



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211. In earthworm, there is a ring of S-shaped setae, embedded in the epidermal pit at the middle of each segment except

- A. First
- B. Last
- C. Clitellar
- D. First, last, and clitellar segments

**Answer: D**



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**212.** There are four pairs of spermathecal pores in pheretima which are located in intersegmental grooves between segments

A. 5/6, 6/7, 7/8, 8/9

B. 6/7, 7/8, 8/9, 9/10

C. 14/15, 15/16, 16/17, 17/18

D. 1/2, 2/3, 3/4, 4/5

**Answer: A**



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**213.** Tick mark the wrong match (in earthworm).

- A. Female genital aperture-Midventral line of 14th segment
- B. A pair of male genital apertures- Ventrolateral sides of 18th segment
- C. Genital papillae- Ventral surface of 17th and 19th segments
- D. Clitellum of Cingulum-9th to 14th segment

**Answer: D**

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**214.** Which of the following are analogous to vertebrate liver cells ?

- A. Chromophil cells
- B. Choragogen cells
- C. Calciferous gland cells
- D. Albumen cells

**Answer: B**



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**215.** In earthworm, typhlosole extends between 27th and 95th segments.

Its function is

- A. Excretion
- B. Enhances effective area of absorption after digestion
- C. Respiration
- D. Locomotion

**Answer: B**



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**216.** Which of the following statements is incorrect about the circulatory system of earthworm?

- A. Pheretima represents a closed type of blood vascular system.

B. Blood glands are present in 4th, 5th, and 6th segments, they produce blood cells and hemoglobin dissolved in plasma.

C. There are four pairs of hearts in earthworm present in 7th, 9th, 12th, and 13th segments.

D. In the dorsal vessel, blood flows in forward direction and is without valves.

**Answer: D**



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**217.** In Earthworm, testes occur in segments

A. 11 and 12

B. 12 and 13

C. 14 and 15

D. 10 and 11



**Answer: D**



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**218.** During copulation in earthworms, sperms are transferred between copulating individuals from

- A. Female genital pore to spermathecae
- B. Male genital pores to spermathecae
- C. Spermathecae to cocoon
- D. Male genital pores to outside

**Answer: B**



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**219.** All the following statements are correct about the reproductive system of earthworm except

- A. Fertilization is external and cross fertilization
- B. There are two pairs of testes in the 10th and 11th segments and one pair of ovaries attached at the intersegmental septum of the 12th and 13th segment.
- C. Accessory glands are present on the ventral surface of 17th and 19th segments.
- D. Earthworm is unisexual.

**Answer: D**

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**220.** The dorsal blood vessel in Pheretima is

- A. Distributing in whole body
- B. Collecting in whole body
- C. Distributing in first 13 segments

D. Collecting in first 13 segments

**Answer: C**



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**221.** In Pheretima, clitellum is primarily meant for

A. Burrowing

B. Fertilization

C. Producing cocoons

D. Locomotion

**Answer: C**



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**222.** Lateral oesophageal hearts in earthworm connect

A. Supra-oesophageal and dorsal vessel to ventral vessel

B. Dorsal vessel to sub-oesophageal vessel

C. Lateral oesophageal vessel to subneural vessel

D. Dorsal vessel to subneural vessel

**Answer: A**

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**223.** Flow of blood in the ventral vessel of earthworm is

A. Forwards

B. Backwards

C. Backwards in half of it and forwards in another half

D. None of these

**Answer: B**

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**224.** The ventral surface of mature earthworm can be distinguished from dorsal surface by

- A. Absence of middorsal line
- B. Presence of clitellum
- C. Presence of genital papillae
- D. None of these

**Answer: C**



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**225.** Which of the following parts of gut occupies most part of the 8th segment?

- A. Oesophagus
- B. Gizzard

C. Stomach

D. Intestine

**Answer: B**



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**226.** Photoreceptors (phaosomes) in earthworm occur in

A. Epidermis of dorsal body wall and prostomium

B. Epidermis of ventral body wall

C. Both (1) and (2)

D. Epidermis of prostomium only

**Answer: A**



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**227.** By which of the following nephridia excretion is exonephric?

- A. Pharyngeal nephridia
- B. Septat nephridia
- C. Integumentary nephridia
- D. Integumentary and pharyngeal nephridia

**Answer: C**



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**228.** Earthworm is

- A. Ammonotelic
- B. Ureotelic
- C. Uricotelic
- D. Ureotelic and ammonotelic

**Answer: D**

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**229.** Pharyngeal nephridia of Earthworm *pheretima* occur in segments

A. 3, 4, 5

B. 4, 5, 6

C. 5, 6, 7

D. 6, 7, 8

**Answer: B**

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**230.** *Periplaneta americana* and *Blatta orientalis* differ mainly from each other in



- A. Body size
- B. Wing length
- C. Length of antenna
- D. Life history

**Answer: B**

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**231.** In cockroach, the body in spite of being covered by an exoskeleton of strong chitinous cuticle remains flexible due to

- A. Tergites
- B. Stemites
- C. Pleurites
- D. Arthroial membranes

**Answer: D**

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**232.** Wings are vestigial in

- A. Male Blatta
- B. Female Blatta
- C. Male Periplaneta
- D. Female Periplaneta

**Answer: B**

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**233.** Structures which help in distinguishing a male cockroach from a female cockroach are

- A. Anal Siyles
- B. Anal cerci

C. Colleterial glands

D. Ocelli

**Answer: A**



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**234.** In cockroach, elytra are articulated to the tergites of

A. Prothorax

B. Mesothorax

C. Metathorax

D. Abdomen

**Answer: B**



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**235.** Which mouth part of cockracah acts as upper lip?

- A. Labium
- B. Labrum
- C. First maxilla
- D. Hypopharynx

**Answer: B**



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**236.** Position of head in relation to body axis of cockroach is known as

- A. Epignathous
- B. Hypognathous
- C. Prognathous
- D. None of these

**Answer: B**



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**237.** Endoskeletal structure present in the head is

- A. Apodeme
- B. Tentorium
- C. Fenestra
- D. Clypeus

**Answer: B**



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**238.** Periplaneta has mosaic vision. Each ommatidium is composed of following parts except

- A. Corneal lens
- B. Refractive crystalline cone
- C. Rhabdome
- D. Phosome

**Answer: D**

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**239.** Which of the following is a wrong match in cockroach?

- A. Head-Hypognathous
- B. Heart-13-chambered
- C. Anal styles-Female cockroach
- D. Excretion-Malpighian tubules

**Answer: C**

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**240.** Pericardial space in Cockroach is regularly altered by muscles

- A. Circular
- B. Longitudinal
- C. Alary
- D. Ciliary

**Answer: C**



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**241.** Number of segments in cockroach leg :

- A. Five
- B. Three
- C. Six

D. Nine

**Answer: A**



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**242.** The main function of blood vascular system in cockroach is

- A. Distribution of oxygen
- B. Distribution of absorbed nutrients
- C. Distribution of heat
- D. All of these

**Answer: B**



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**243.** The correct sequence of arrangements of segments in the leg of cockroach is

- A. Trochanter, cox a, femur, tibia, tarsus
- B. Coxa, trochanter, femur, tibia, tarsus
- C. Coxa, femur, trochanter, tibia, tarsus
- D. Trochanter, femur, coxa, tibia, tarsus

**Answer: B**



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**244.** Funtion of Malpighian tubules of cockroach :

- A. Respiration
- B. Digestion
- C. Excretion
- D. Reproduction

**Answer: C**



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**245.** Structure that helps the cockroach to walk on smooth surfaces is

A. Trochanter

B. Plantulae

C. Cardo

D. Scape

**Answer: B**



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**246.** Open blood vascular system without any respiratory pigment is found in

A. Earthworm

B. Cockroach

C. Nereis

D. Hydra

**Answer: B**



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**247.** The number of spiracles in *Periplaneta americana* is

A. 10

B. 20

C. 8

D. 6

**Answer: B**



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**248.** The function of stomodaeal valve in the gut of the cock-roach is to prevent the regurgitation of partially digested food from

- A. Midgut into crop
- B. Pre-oral cavity
- C. Midgut into hindgut
- D. None of these

**Answer: A**



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**249.** The unit of photoreception, in a compound eye of cockroach and other insects is

- A. Crystalline cone
- B. Rhabdome

C. Ommatidium

D. Facet

**Answer: C**



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**250.** Which of the two parts in cockroach are fundamentally similar in structure?

A. Anal styles and labrum

B. Wings and anal cerci

C. Maxillae and legs

D. Mandibles and antennae

**Answer: C**



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**251.** Number of chambers in the heart of cockroach :

A. 3

B. 4

C. 13

D. 23

**Answer: C**



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**252.** In cockroach, ootheca is produced by secretion of -

A. Colleterial glands

B. Conglobate gland

C. Mushroom glands

D. Gynatrium

**Answer: A**



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**253.** The number of eggs contained in an ootheca of cockroach is

A. 8

B. 16

C. 32

D. 4

**Answer: B**



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**254.** Conglobate organ is a part of male reproductive system of

A. Prawn

B. Cockroach

C. Earthworm

D. Frog

**Answer: B**



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**255.** The number of ganglia in the abdominal nerve-cord of cockroach is

A. 6

B. 9

C. 10

D. 12

**Answer: A**



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256. The frog 's body is divisible into

- A. Head, neck, abdomen
- B. Head, neck, trunk
- C. Head, trunk
- D. None of these

**Answer: C**



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257. Which of the following statements is not true?

- A. The body color of frog offers it protective coloration.
- B. The summer sleep of frog is called aestivation.
- C. Tail is present in the lifecycle of frog.
- D. Frog's mouth is bounded by a pair of lips.

**Answer: D**



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**258.** In a frog, shank or crus is associated with

- A. Forelimb
- B. Hind limb
- C. Head
- D. Trunk

**Answer: B**



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**259.** Which of the following is present in the skin of frog?

- A. Serous gland

B. Mucus gland

C. Chromatophore cells

D. All of these

**Answer: D**



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**260.** The total number of bones in frog is

A. 145

B. 153

C. 352

D. 178

**Answer: B**



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261. Which of the following vertebra is amphicoelous type in frog?

- A. 3rd
- B. 9th
- C. 8th
- D. 10th

**Answer: B**



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262. The digital formula for the hind limbs of frog is

- A. 0, 2, 2, 3, 3
- B. 2, 2, 3, 3, 3
- C. 2, 2, 3, 4, 3
- D. 0, 2, 1, 2, 3

**Answer: C**



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**263.** Poison glands are usually present in the skin of

- A. Frogs
- B. Toads
- C. Newts
- D. None of these

**Answer: B**



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**264.** Frog is

- A. Homoeothermic

B. Poikilothermic

C. Homeostatic

D. Warm-blooded

**Answer: B**



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**265.** The most common Indian toad is

A. *Bufo melanostictus*

B. *Rana tigrina*

C. *Alytes*

D. *Heloderma*

**Answer: A**



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**266.** Capacity of amphibians to change colour is called

- A. Synchronous
- B. Metachronous
- C. Metachrosis
- D. None of these

**Answer: C**



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**267.** Which is not true about frog?

- A. Salivary glands are absent.
- B. Maxillary teeth are arranged along the margin of upper jaw and the lower jaw is toothless.
- C. Muscular tongue is bilobed at tip and free from behind.

D. The tadpole larva of frog has a short alimentary canal.

**Answer: D**



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**268.** Bidder's canal in frog is present in

- A. Testes
- B. Kidney
- C. Ovary
- D. Brain

**Answer: B**



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**269.** During active period, maximum respiratory activity is through



- A. Cutaneous respiration
- B. Branchial respiration
- C. Pulmonary respiration
- D. Buccopharyngeal respiration

**Answer: C**

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**270.** How many lymph hearts are present in frog?

- A. Single
- B. One pair
- C. Two pairs
- D. Three pairs

**Answer: C**

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271. Which of the following parts of frog's heart has spiral valve?

- A. Conus arteriosus
- B. Synangium
- C. Pylangium
- D. Both (1) and (2)

**Answer: C**



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272. The middle ear of *Rana tigrina* has

- A. Three ear ossicles, i.e., malleus, incus, and stapes
- B. One ear ossicle columella auris
- C. Two ear ossicles columella auris and stapedi al plate

D. No ear ossicle

**Answer: B**



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**273.** Cerebrum is the part of

A. Forebrain

B. Midbrain

C. Hindbrain

D. Rhombencephalon

**Answer: A**



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**274.** The number of cranial nerves and spinal nerves in frog is

A. 10 and 20

B. 10 and 10

C. 20 and 10

D. 20 and 20

**Answer: D**

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**275.** Which of the following is true ?

A. Frog has monocular vision .

B. Frog has membrane present al lhc body surface.

C. Frog is myopic (short sighted) on land.

D. All of these are true.

**Answer: D**

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276. Spawning is termed as

- A. Release of sperms in male
- B. Release of ovum in female
- C. Another term for fertilization
- D. None of these

**Answer: B**



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277. Which of the following systems undergoes maximum changes in frog during metamorphosis?

- A. Digestive system
- B. Circulatory system
- C. Reproductive system

D. Nervous system

**Answer: B**



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**278.** Respiration in the tadpole of frog takes place by

A. Lungs

B. Gills

C. Buccal cavity

D. Skin

**Answer: B**



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**279.** Frog is

- A. Fully aquatic
- B. Terrestrial
- C. Both aquatic and terrestrial
- D. Arboreal

**Answer: C**

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**280.** Fertilization in frog takes place in

- A. Mud
- B. Land
- C. Water
- D. Air

**Answer: C**

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**281.** The skull of frog is

- A. Non-condylic
- B. Diconidylic
- C. Monocondylic
- D. None of these

**Answer: B**



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**282.** On removing the thyroid from the tadpole of frog

- A. Metamorphosis will stop
- B. It grows into a giant frog
- C. It grows into a dwarf frog



D. Normal metamorphosis occurs

**Answer: A**



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**283.** At a time, a mature female frog can lay

- A. 2500-3000 fertilized eggs
- B. 2500-3000 unfertilized egg
- C. 200-300 fertilized eggs
- D. 200- 300 unfertilized eggs

**Answer: B**



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**284.** Calciferous glands are present in earthworm in

- A. Pharynx and gizzard
- B. Stomach and buccal cavity
- C. Pharynx and stomach
- D. Only in stomach

**Answer: D**

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**285.** In earthworm, skeleton-like function is performed by

- A. Coelomic fluid
- B. Alimentary canal filled with food
- C. Typhlosole
- D. Clitellum

**Answer: A**

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**286.** One of the following is unpaired in earthworm.

- A. Male genital pore
- B. Female genital pore
- C. Genital papillae
- D. Spennathecae

**Answer: B**



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**287.** Which of the following is incorrectly matched?

- A. Male genital pore-18th segment
- B. Female genital pore-14th segment
- C. Lateral oesophageal hearts-7th and 9th segments

D. Seminal vesicles-11th and 12th segments

**Answer: C**



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**288.** Trait common amongst Earthworm , Leech and centipede is

- A. Absence of legs
- B. Presence of ventral nerve cord
- C. Presence of malpighian tubules
- D. They are hennaphrodite

**Answer: B**



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**289.** In Earthworm arrangement of blood vessels is

- A. Different in last 15 segments
- B. Different in first 13 segments
- C. Same throughout
- D. Different in middle 13 segments

**Answer: B**

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**290.** In a copulatory pair of earthworms, there occur

- A. Reciprocal fertilization and internal fertilization
- B. Cross fertilization and external fertilization
- C. External fertilization and internal fertilization
- D. Cross fertilization and reciprocal fertilization

**Answer: D**

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**291.** In Earthworm, setae are absent from

- A. Clitellum
- B. First segment
- C. Clitellum and last segment
- D. Clitellum, first and last segment

**Answer: D**



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**292.** The excretory organ of earthworm are

- A. Nephridia
- B. Solenocytes
- C. Green glands

D. Kidneys

**Answer: A**



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**293.** Just as there are nephridia in earthworm, so are

- A. Myotomes in fish
- B. Statocysts in prawn
- C. Parotid glands in toad
- D. Flame cells in liver fluke

**Answer: D**



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**294.** Life span of Earthworm is

A. 1-3 years

B. 2-8 years

C. 3.5-10.5 years

D. 6-8 years

**Answer: C**



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**295.** Copulation period of Earthworm is

A. One hour

B. Two hours

C. Four hours

D. About one week

**Answer: A**



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**296.** Dorsal vessel of Earthworm is

- A. Distributing
- B. Collecting
- C. Collecting in first 13 segments and distributing in the rest
- D. Distribution in first 13 segments and collecting in the rest

**Answer: D**



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**297.** Who wrote the memoir on Pheretima and described its anatomy?

- A. M.L. Bhatia
- B. B.I. Sunderraj
- C. K.N. Bahl

D. Beni Prasad

**Answer: C**



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**298.** Spermathecae of Earthworm take part in

- A. Collection of sperms of other worm
- B. Collection of sperms of the same worm
- C. Sperm maturation
- D. Fertilization

**Answer: A**



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**299.** Closed circulatory system occurs in

- A. Earthworm
- B. Cockroach
- C. Grasshopper
- D. Housefly

**Answer: A**

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**300.** In Earthworm mouth is situated on

- A. Prostomium
- B. Peristomium
- C. Stomium
- D. Protostomium

**Answer: B**

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**301.** Annelida is advanced over nematoda in having

- A. Closed circulation
- B. Metameric segmentation
- C. True coelom
- D. All the above

**Answer: D**



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**302.** Segments of earthworm are called

- A. Metamere
- B. Sarcomere
- C. Prostomium

D. Podomeres

**Answer: A**



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**303.** In Earthworm, dorsal blood vessel is collecting channel

A. Behind 13th segment

B. Anterior 13 segment

C. Throughout

D. In typhlosolar region

**Answer: A**



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**304.** Blood vessel in pheretima having valves is

A. Dorsal

B. Ventral

C. Lateral

D. Integumentary

**Answer: A**



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**305.** In Earthworm male genital apertures are present ventrally in the segment

A. 14

B. 18

C. 13

D. 19

**Answer: B**

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**306.** Chloragogen cells of Earthworm are similar to an organ of vertebrates

- A. Liver
- B. Lung
- C. Kidney
- D. Spleen

**Answer: A**

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**307.** In Pheretima, which nephridia are present?

- A. Protonephridia
- B. Coelom duct

C. Micro-metanephridia

D. Solenocytes

**Answer: C**



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**308.** The blood vessels in earthworm are

A. Different in last 15 segments

B. Different in first 13 segments

C. Same throughout

D. Different in middle segments

**Answer: B**



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**309.** The enteronephric nephridia of earthworm also perform the function of

- A. Respiration
- B. Excretion
- C. Osmoregulation
- D. Thermoregulation

**Answer: C**



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**310.** In Pheretima, locomotion occurs with the help of

- A. Circular muscles
- B. Longitudinal muscles and setae
- C. Circular, longitudinal muscles and setae
- D. Parapodia

**Answer: B**



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**311.** Earthworm takes food by which method?

- A. Ciliary feeding
- B. Detritus feeding
- C. Liquid feeding
- D. None of these

**Answer: B**



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**312.** In Earthworm, cocoon is formed by

- A. Chitinous setae

B. Cuticle

C. Clitellum

D. Epidermal muscles

**Answer: C**



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**313.** The total number of ganglia present on the nerve cord of cockroach is

A. 6

B. 9

C. 10

D. 12

**Answer: B**



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314. In frog, jelly around the eggs is deposited in

- A. Ovary
- B. Oviduct
- C. Water after fertilization
- D. Water during fertilization

**Answer: B**



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315. Young Cockroach is called

- A. Maggot
- B. Ephyra
- C. Nymph
- D. Pupa

**Answer: C**



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**316.** In arthropods the body cavity is called

- A. Interon
- B. Pseudocoel
- C. Hemocoel
- D. Coelom

**Answer: C**



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**317.** 13- chambered tubular heart is found in

- A. Cockroach

B. Earthworm

C. Frog

D. Rabbit

**Answer: B**



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**318.** Open blood vascular system without hemoglobin or any other respiratory pigment is found in

A. Cockroach

B. Fathworm

C. Hydra

D. Nereis

**Answer: A**



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**319.** If corpora allata are removed from the first instar of a nymph, then

- A. It will remain nymph forever
- B. It will enter into the secondary stage of juvenile
- C. It will become adult immediately
- D. None

**Answer: C**



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**320.** An insect which undergoes complete metamorphosis is called

- A. Ametabola
- B. Hemimetabola
- C. Holometabola
- D. None of these

**Answer: C**



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**321.** The function of ecdysone hormone in insect is

- A. The growth and development of larva
- B. The maturation into adult and laying eggs
- C. To carry moulting in larval stage to form pupa
- D. The secretion of cuticle in adult

**Answer: C**



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**322.** Oxygen-carrying respiratory pigment of cockroach and other insect is

- A. Hemoglobin



B. Hemocyanin

C. Hemoerythrin

D. None

**Answer: D**



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**323.** Body of an insect is divisible into

A. Head, thorax, and abdomen

B. Head, trunk, and abdomen

C. Cephalothorax, head, and abdomen

D. Trunk, thorax, and abdomen

**Answer: A**



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324. What is the similarity between fly, mosquito and cockroach

- A. Thirteen-chambered heart
- B. Three pairs of legs
- C. Open excretory system
- D. Housefly

**Answer: B**



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325. Respiration pigment of blood in cockroach is

- A. Hemozoin
- B. Hemocyanin
- C. Hemoglobin
- D. Absent

**Answer: D**



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**326.** Which type of image is found in the eye of cockroach?

- A. Mosaic
- B. Superposition
- C. Overlapping
- D. None of these

**Answer: A**



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**327.** Mandibles are present in the mouth parts of

- A. Locust

B. Cockroach

C. Bedbug

D. Housefly

**Answer: B**



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**328.** In Periplaneta, the cuticular lipid is secreted by

A. Hypodermal cells

B. Oenocyte cell

C. Dermal gland cells

D. Basal cell

**Answer: B**



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**329.** In cockroach, vision is due to

- A. One compound eye
- B. Only two compound eyes
- C. Two simple eyes
- D. Two compounds and two simple eyes

**Answer: B**



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**330.** Haemocoel is present in

- A. Pheretima
- B. Periplaneta
- C. Sponge
- D. Ascaris

**Answer: B**



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**331.** Chitinous exoskeleton is found in

A. *Periplaneta*

B. *Ascaris*

C. *Pheretima*

D. *Hydra*

**Answer: A**



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**332.** Common indian bull frog is

A. *Rana tigrina*

B. *Rana esculent*

C. *Rana limnocharis*

D. *Rana cyanophlyctis*

**Answer: A**



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**333.** Croaking of frog is

A. Hunger call

B. Danger call

C. Musical tone

D. Sex call for female

**Answer: D**



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**334.** The opening of rectum in frog is called

- A. Vestibule
- B. Cloaca
- C. Coccyx
- D. None of the above

**Answer: B**



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**335.** The number of fingers in the hindlimb of frog is

- A. 4
- B. 5
- C. 6
- D. 7



**Answer: B**



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**336.** Mucus helps frog in making

- A. Dry skin
- B. Moist skin
- C. Rough skin
- D. Thick skin

**Answer: B**



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**337.** Chromatophores in skin of frog found in stratum

- A. Comeum

B. Compactum

C. Germinativum

D. Mostly spongiosum

**Answer: D**



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**338.** One of the main functions of frog's skin is

A. Diffusion of respiratory gases

B. Absorption of ultraviolet rays to produce vitamin D

C. Storage of excess food in the form of subcutaneous fat

D. Excretion of nitrogenous waste in the form of uric acid

**Answer: A**



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**339.** In frog, the surface of attachment of tongue is

- A. Palatine
- B. Sphenoid
- C. Pterygoid
- D. Hyoid apparatus

**Answer: D**



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**340.** In frog, digestion of fats occurs mostly in

- A. Rectum
- B. Stomach
- C. Duodenum
- D. Small intestine

**Answer: D**



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**341.** A fully grown tadpole larva of frog respire through

- A. Gills
- B. Skin
- C. Lungs
- D. Tail fin

**Answer: B**



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**342.** In frog, cutaneous respiration takes place

- A. Always

B. Only on land

C. Only in water with pulmonary respiration

D. Only in water pulmonary respiration is not occurring

**Answer: A**



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**343. Amphibian heart is**

A. One-chambered

B. Three-chambered

C. Two-chambered

D. Four-chambered

**Answer: B**



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**344.** Sciatic vein of frog opens in

- A. Heart
- B. Kidney
- C. Pelvic region
- D. Liver

**Answer: C**



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**345.** Functional kidney of tadpole in Frog is

- A. Pronephros
- B. Archinephros
- C. Mesonephros
- D. Metanephros

**Answer: A**



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**346.** Nitrogenous excretory product of tadpole of frog is

- A. Urea
- B. Guanine
- C. Uric acid
- D. Ammonia

**Answer: D**



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**347.** In frog

- A. Acetylcholine is the only neurotransmitter

- B. Noradrenaline is the only neurotransmitter
- C. Both acetylcholine and noradrenaline act as neurotransmitters
- D. Neither acetylcholine nor noradrenaline acts as neurotransmitter

**Answer: C**

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**348.** What will happen if the eyes of a frog are covered by paper

- A. Frog will soon die
- B. Frog will not move
- C. Frog will not do anything
- D. Frog will move to one side only

**Answer: C**

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**349.** A frog has

- A. Eyes but no lids
- B. Jaws but no teeth
- C. Hands but not fingers
- D. Ears but not pinnae

**Answer: D**



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**350.** Which of these is an ear ossicle in frog

- A. Incus
- B. Auricle
- C. Malleus
- D. Columella auris

**Answer: D**



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**351. Columella auris is a modified**

- A. Quadrate
- B. Article
- C. Hyomandibular
- D. Sphenethmoid

**Answer: C**



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**352. Fenestra ovalis in frog is the**

- A. Air-filled cavity of middle ear

- B. Communication between pharynx and tympanic cavity
- C. External opening of tympanic cavity covered by tympanic membrane
- D. Opening of auditory capsule which separates middle ear from internal ear

**Answer: D**

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**353.** Chromatophores in frog's skin are controlled by

- A. Hormones
- B. Environment
- C. Nervous activity
- D. Nervous and hormonal activities

**Answer: A**

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**354.** Mesorchium in frog refers to

- A. Fold of peritoneum between a kidney and a testis
- B. Internal tissue of testes
- C. Capsules of testes
- D. None of these

**Answer: A**



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**355.** In frog, the ureter is a urinogenital duct in

- A. Male
- B. Female
- C. Male and female

D. Male or fema

**Answer: A**



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**356.** Tendons and ligaments are specialized types of

A. Nervous tissue

B. Epithelial tissue

C. Muscular tissue

D. Fibrous connective tissue

**Answer: D**



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**357.** Which is a transparent tissue ?

A. Tendon

B. Ligament

C. Fibrous cartilage

D. Hyaline cartilage

**Answer: D**



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**358.** Ciliated epithelium is present In

A. Trachea

B. Ureter

C. Intestine

D. Nasal chamber

**Answer: A**



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**359.** Difference between bone and cartilage is

- A. Haversian canal
- B. Blood vessel
- C. Lymph vessel
- D. None of these

**Answer: A**



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**360.** Minimum regeneration power is present in

- A. Nervous tissue
- B. Connective tissue
- C. Epithelial tissue

D. None of these

**Answer: A**



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**361.** Which one of the following couple were suggested by Doctors to not have more than one child

- A. Rh+ male and Rh- female
- B. Rh- male and Rh+ female
- C. Rh+ male and Rh+ female
- D. Rh- male and Rh- female

**Answer: A**



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**362.** The  $pH$  of blood is

- A. Between 7 and 8
- B. Between 2 and 4
- C. Between 12 and 14
- D. Between 2 and 5

**Answer: A**



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**363.** Histamine is secreted by

- A. Goblet cell
- B. Nerve cell
- C. Kupffer cell
- D. Mast cell

**Answer: D**



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**364.** Average life span of human RBC is

- A. 50 days
- B. 70 days
- C. 120 days
- D. 220 days

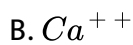
**Answer: C**



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**365.** During blood clotting, which of the following is used?

- A. Co

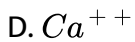
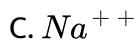
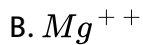
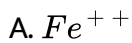


**Answer: B**



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**366. Hemoglobin contains**



**Answer: A**



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**367.** Which of the following does not play a role in blood coagulation

- A. Vitamin K
- B. Vitamin D
- C. Calcium ions
- D. Fibrinogen

**Answer: B**



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**368.** Which of the following cells of connective tissue secrete antibodies ?

- A. Mast cells
- B. Reticular cells
- C. Adipose cells
- D. Plasma cells

**Answer: D**



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**369.** Male frogs can croak louder than females because of

- A. Vocal sacs
- B. Stronger
- C. Larger in size
- D. Larger sound box

**Answer: A**



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**370.** During hibernation, frog respire with

- A. Lung only

- B. Moist skin only
- C. Buccal cavity only
- D. External gills and lungs

**Answer: C**



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**371.** Acrosome of the sperm of frog helps in fertilization by

- A. Activating the oocyte to engulf the sperm
- B. Inducing formation of cone of reception in oocyte
- C. Stimulating oocyte to undergo second maturation division
- D. Secreting sperm lysin to dissolve covering membrane of oocyte

**Answer: D**



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**372.** Oxygen carrier or the respiratory pigment in blood of frog and other vertebrates is

- A. Myoglobin
- B. Cytochrome
- C. Hemoglobin
- D. Hemocyanin

**Answer: B**



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**373.** Enzyme secreted from the acrosome of frog's sperm is

- A. Sperm lysin
- B. Testosterone
- C. Sperm trypsin
- D. Sperm gastrin

**Answer: A**



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**374.** The epithelial lining of respiratory system in frog is derived by

- A. Ectoderm
- B. Endoderm
- C. Mesoderm
- D. Mesoderm and endodernn

**Answer: B**



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**375.** Photoreceptors in Pheretima are present

- A. On the ventral side of skin



B. On the dorsal side of skin

C. On both sides

D. In clitellum

**Answer: B**



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**376.** Frog is

A. Ureotelic

B. Uricotelic

C. Ammonotelic

D. None of the above

**Answer: A**



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377. Alary muscles in cockroach occur in the

- A. Heart wall and help in blood circulation
- B. Dorsal septum and connect the septum with heart and tergite
- C. Wall of gizzard and help in its contraction
- D. Intestinal wall and help in digestion

**Answer: B**



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378. Spermathecal pores of Pheretima are present in

- A. 1/2, 2/3, 3/4, 4/5
- B. 6/7, 7/8, 8/9, 9/10
- C. 5/6, 6/7, 7/8, 8/9
- D. 14/15, 15/16, 16/ 17, 17/ 18

**Answer: C**



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**379.** *Periplaneta americana* differs from *Blatta orientalis* in having

- A. No wing
- B. Only first pair of wings
- C. Well-developed wings
- D. Only second pair of wings

**Answer: B**



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**380.** Colleterial gland is present in

- A. Male cockroach

B. Female cockroach

C. None

D. Both male and female cockroach

**Answer: B**



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**381.** Pericardial space in Cockroach is regularly altered by muscles

A. Ciliary

B. Alary

C. Circular

D. Longitudinal

**Answer: B**



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**382.** Hemoglobin is dissolved in the blood plasma of

- A. Rabbit
- B. Cockroach
- C. Earthworm
- D. Frog

**Answer: C**



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**383.** The role of typhlosole of earthworm is to

- A. Emulsify
- B. Control blood flow
- C. Increase absorption area of digested food
- D. Produce digestive enzymes

**Answer: C**



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**384.** Septum is lacking in Pheretima in segments

A. 7/8, 6/7

B. 3/4, 9/ 10

C. 4/5, 8/9

D. 6/7, 8/9

**Answer: B**



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**385.** Mouth parts of cockroach is

A. Piercing and sucking type

B. Biting and sucking type

C. Biting and chewing type

D. Sponging type

**Answer: C**



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**386.** Which one is not true about earthworm?

A. It can live in the deficiency of O<sub>2</sub> for 3-10 h.

B. It has a life span of 3 .5-10 years.

C. Pineal setae are dissolved in KOH

D. It is soilivorous

**Answer: C**



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**387.** Assertion (A) *Periplaneta americana* is nocturnal, omnivorous, household pest.

Reason (R) It is because it acts as scavenger.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**388.** Assertion: Earthworm is brown- or clay-coloured.

Reason: Because of the presence of pigment porphyrin.



- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: A**



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**389.** Assertion: Chloragogen cells are considered analogous to the liver of vertebrates.

Reason: Because it is concerned with the storage of reserve food, deamination of proteins, formation of urea, etc.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**

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**390.** Assertion: Earthworm is saprozoic.

Reason: Because it feeds on small insects.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: C**

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**391.** Assertion: Earthworm is hermaphrodite.

Reason: Because in earthworm both sexes are separate.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**

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**392.** Assertion: Earthworms are the enemy of farmer.

Reason: Because they destroy the crop in field.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**393.** Assertion: In the body of earthworm, porphyrin pigment is found.

Reason: Because it protects earthworm from chrnicals.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: C**



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**394.** Assertion: In earthworm, development larval stage is not found.

Reason: Because in development larval stage is not found.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**

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**395.** Assertion: In the anus of earthworm, depressor muscles are found.

Reason: These muscles help in the eimination of excretion om rectum

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: A**

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**396.** Assertion: In cockroach, inspiration is an active process.

Reason: It is due to the contraction of tergoventral muscle.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: D**

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**397.** Assertion: Septal nephridia take part in osmoregulation.

Reason: They are enteronephric.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: A**



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**398.** Assertion: In Periplaneta, only superposition or overlapping images are formed.

Reason: Retinal pigment sheath remains contracted throughout the life.



- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: D**



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**399.** Assertion: The pharyngeal gland of earthworm includes chromophil cells, which secrete saliva.

Reason: Salivary amylase of earthworm is essential to digest carbohydrates.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: C**

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**400.** Assertion: The head of cockroach is hypognathus.

Reason: The proximal part of lower lip of cockroach is called pastmentum.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If both Assertion and Reason are false.

**Answer: B**



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**401.** Assertion: The heart of cockroach is neurogenic.

Reason: The heartbeat rate in cockroach is 49 per minute.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is true, but Reason is false.
- D. If both Assertion and Reason are false.

**Answer: B**



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1. In which one of the following preparations are you likely to come across cell junctions most frequently ?

- A. Hyaline cartilage
- B. Ciliated epithelium
- C. Thrombocytes
- D. Tendon

**Answer: B**



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2. The kind of tissue that forms the supportive structure in our pinna (external ears) is also found in

A. tip of the nose

B. vertebrae

C. nails

D. ear ossicles

**Answer: A**



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3. Cell junctions called tight , adhering and gap junctions are found in

A. Neural tissue

B. Muscular tissue

C. Connective tissue

D. Epithelial tissue

**Answer: D**



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4. The epithelial tissue present on the inner surface of bronchioles and fallopian tubes is

- A. Squamous
- B. Cuboidal
- C. Glandular
- D. Ciliated

**Answer: D**



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5. Which one of the following is correct pairing of a body part and the kind of muscle tissue that moves it

- A. Iris - Involuntary smooth muscle
- B. Heart wall - Involuntary unstriated muscle

C. Biceps of upper arm - smooth muscle fibres

D. Abdominal wall - smooth muscle

**Answer: D**

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6. The kind of epithelium which forms inner walls of blood vessels is

A. cuboidal epithelium

B. columnar epithelium

C. ciliated columnar epithelium

D. squamous epithelium

**Answer: D**

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7. The ciliated columnar epithelial cells in humans are known to occur in

- A. Fallopian tubes and urethra
- B. Eustachian tube and stomach lining
- C. Bronchioles and Fallopian tubes
- D. Bile duct and oesophagus

**Answer: C**



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8. Compared to those of humans, erythrocytes of Frog are

- A. Nucleated and with hemoglobin.
- B. Very much smaller and fewer
- C. Nucleated and without hemoglobin.
- D. Without nucleus but with hemoglobin.



**Answer: C**



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9. Select the correct statement regarding the specific disorder of muscular or skeletal system.

- A. Osteoporosis: Decrease in bone mass and higher chances of fractures with advancing age.
- B. Myasthenia gravis: Autoimmune disorder which inhibits sliding of myosin filaments
- C. Gout: Inflammation of joints due to extra deposition of calcium.
- D. Muscular dystrophy: Age-related shortening of muscles.

**Answer: A**



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

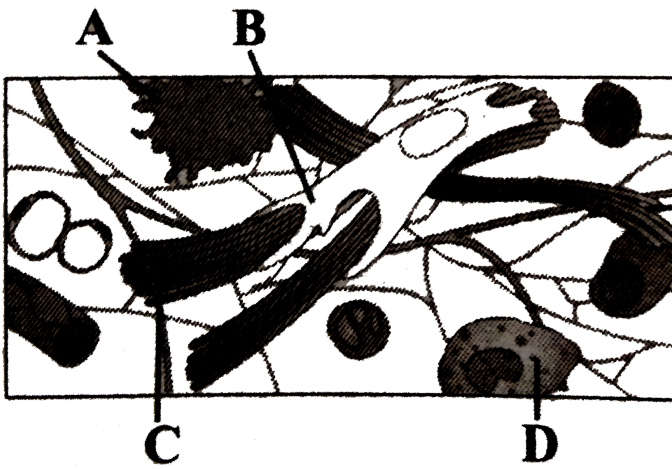
- A. There are 16 very long Malpighian tubules present at the junctions of midgut and hindgut
- B. Grinding of food is carried out only by the mouth parts
- C. Nervous system located dorsally, consists of segmentally arranged ganglia joined by a pair of longitudinal connective
- D. Males bear a pair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

**Answer: D**



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11. 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.



- |    |                |                 |                 |                 |
|----|----------------|-----------------|-----------------|-----------------|
|    | Part A         | Part B          | Part C          | Part D          |
| A. | (1) Macrophage | Fibroblast      | Collagen fibers | Mast cell       |
|    | Part A         | Part B          | Part C          | Part D          |
| B. | (2) Mast cell  | Macrophage      | Fibroblast      | Collagen fibers |
|    | Part A         | Part B          | Part C          | Part D          |
| C. | (3) Macrophage | Collagen fibers | Fibroblast      | Mast cell       |
|    | Part A         | Part B          | Part C          | Part D          |
| D. | (4) Mast cell  | Collagen fibers | Fibroblast      | Macrophage      |

**Answer: C**



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12. Which one of the following pairs of chemical substances, is correctly categorised ?

A. (1) Calcitonin and thymosin Thyroid hormones

B.

(2) Pepsin and prolactin Two digestive enzymes secreted in stomach

C.

(3) Troponin and myosin Complex proteins in striated muscles

D. (4) secretin and rhodopsin Polypeptide hormones

**Answer: C**



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**13.** Supportive skeletal structures in the human external ears and nose tip are of

A. Ligament

B. Areolar tissue

C. Bone

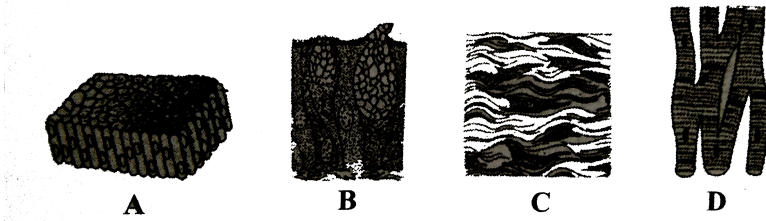
## D. Cartilage

Answer: D



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14. 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 ?



- A.
- | Tissue                       | Location  | Function  |
|------------------------------|-----------|-----------|
| (1)(B), Glandular epithelium | Intestine | secretion |
- B.
- | Tissue                  | Location  | Function                         |
|-------------------------|-----------|----------------------------------|
| (2)(C), Collagen fibers | Cartilage | Attach skeletal muscles to bones |
- C.
- | Tissue                       | Location | Function          |
|------------------------------|----------|-------------------|
| (3)(D), Smooth muscle tissue | Heart    | Heart contraction |
- D.
- | Tissue           | Location | Function                 |
|------------------|----------|--------------------------|
| (4)(A), Columnar | Nephron  | secretion and absorption |

**Answer: A**



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**15.** The H-zone in the skeletal muscle fibre is due to

- A. The central gap between myosin filaments in the A band.
- B. The central gap between actin filaments extending through myosin filaments in the A band.
- C. The extension of myosin filaments in the central portion of the A band.
- D. The absence of myofibrils in the central portion of A band.

**Answer: B**



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**16.** Choose the correctly matched pair

- A. Inner lining of salivary ducts- Ciliated epithelium
- B. Moist surface of buccal cavity- Glandular epithelium
- C. Tubular parts of nephrons- Cuboidal epithelium
- D. Inner surface of bronchioles- Squamous epithelium

**Answer: C**

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**17. The guts of cow and buffalo possess**

- A. Cyanobacteria
- B. fucus spp.
- C. Chlorella spp.
- D. Methanogens

**Answer: D**

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18. Which type of tissue correctly matches with its location ?

- |    | Tissue                  | Location          |
|----|-------------------------|-------------------|
| A. | (1) Smooth muscle       | Wall of intestine |
| B. | (2) Areolar tissue      | Tendons           |
| C. | (3) Transitional tissue | Tip nose          |
| D. | (4) Cuboidal epithelium | Lining            |

**Answer: A**



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19. 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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20. Which one of the following correctly describes the location of some body parts in the earthworm *Pheretima*

- A. Two pairs of accessory glands in 16-18 segments
- B. Two pairs of testes in 10th and 11th segments
- C. Four pairs of spermathecae in 4-7 segments
- D. One pair of ovaries attached at intersegmental septum of 14th and 15th segments.

**Answer: B**



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21. If a live earthworm is pricked with a needle on its outer surface without damaging its gut, the fluid that comes out is

- A. Slimy mucus
- B. Excretory fluid
- C. Coelomic fluid
- D. Haemolymph

**Answer: C**



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22. Which of the following is correct for the common cockroach ?

- A. The food is ground by mandibles and gizzard
- B. Malpighian tubules are excretory organs projecting out from the colon
- C. Oxygen is transported by haemoglobin in blood

D. Nitrogenous excretory product is urea

**Answer: A**



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**23.** One very special feature in the earthworm *pheretima* is that

- A. It has a long dorsal tubular heart
- B. Fertilisation of eggs occurs inside the body
- C. The typhlosole greatly increases the effective absorption area of the digested food in the intestine
- D. The S-shaped state embedded in the integument are the defensive weapons used against the enemies

**Answer: C**



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24. What external changes are visible after the last moult of a cockroach nymph?

- A. Mandibles become harder
- B. Anal cerci develop
- C. Both fore wings and hind wings develop
- D. Labium develops

**Answer: C**



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25. Choose the correctly matched pair:

- A. Tendon-Specialized connective tissue
- B. Adipose tissue-Dense connective tissue
- C. Areolar tissue-Loose connective tissue
- D. Cartilage-Loose connective tissue

**Answer: D**



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**26.** Which of the following characteristics is mainly responsible for diversification of insects on land?

A. Eyes

B. Segmentation

C. Bilateral symmetry

D. Exoskeleton

**Answer: D**



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**27.** In male cockroaches, sperms are stored in which part of the reproductive system?

A. Testes

B. Vas deferens

C. Seminal vesicles

D. Mushroom glands

**Answer: C**



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