

136. All of the following have epithelium which provide protection against chemical and mechanical stress, **except**

Compound

(A) Moist surface of buccal cavity ✓

(B) Pharynx ✓

~~(C) Fallopian tube~~

ciliated columnar

(D) Dry surface of skin ✓

137. Muscle fibres present in blood vessels, stomach and intestine are

(A) Tapering at both ends

(B) Branched ✗

(C) Cylindrical in shape ✗

(D) Striated ✗

Smooth



138. Choose the incorrect option w.r.t. female cockroach

✓ (A) Fat body, nephrocytes and urecose gland also help in excretion along with malpighian tubules → 0-1

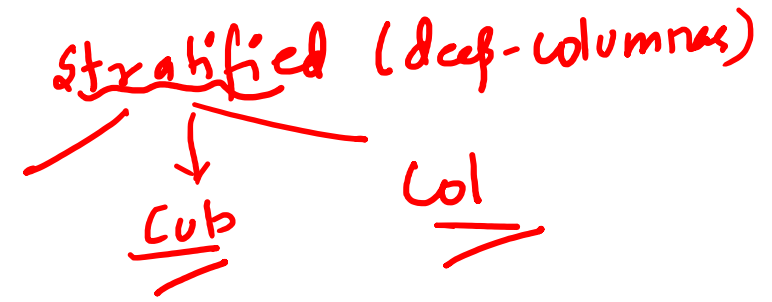
(B) A pair of spermatheca are present in 6th abdominal segment which opens into genital chamber ✓

(C) 10th segment bears a pair of jointed filamentous structures called anal cerci ✓

(D) Blood vessels are poorly developed and open into haemocoel ✓

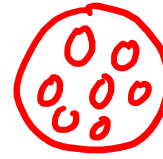
139. Stratified epithelium has many layer of cells, however the deepest layer is made up of columnar or cuboidal cells. This epithelium is classified on the basis of
- (A) Shape of the cells present in the deepest layer
 - (B) Shape of the cells present in the middle layer
 - ✓ (C) Shape of the cells present in the superficial layer
 - (D) Total number of layers

Sq



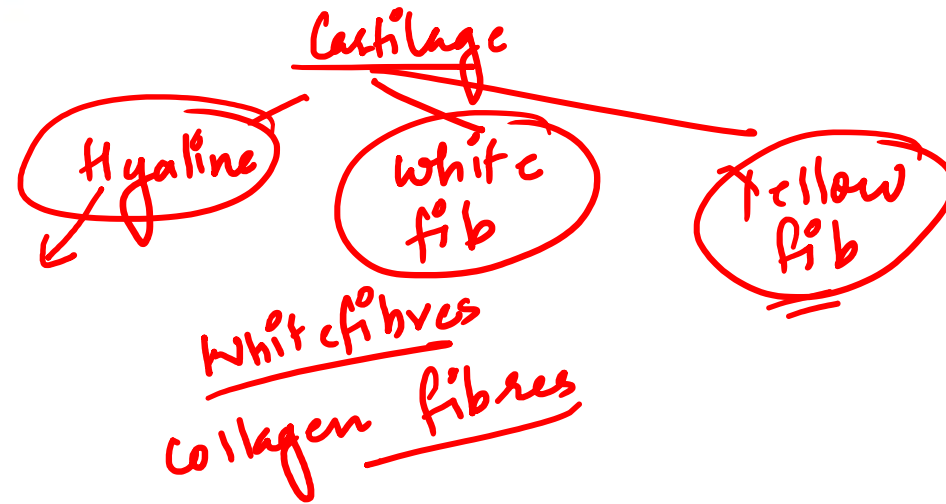
140. Brown fat is _____ and found in _____.

- (A) Monocular, adult human
- (B) Multilocular, new born human babies *infant*
- (C) Multilocular, adult human only
- (D) Monocular, hibernating mammals



141. Which of the following is strongest cartilage in human body?

- (A) Intervertebral disc
- (B) Epiglottis X
- (C) Larynx X
- (D) Costal cartilage X



142. Select the correct set of locations of stratified squamous non-keratinized epithelium

(A) Olfactory mucosa, cornea,
conjunctiva X

~~(B) Buccal cavity, vagina, oesophagus~~

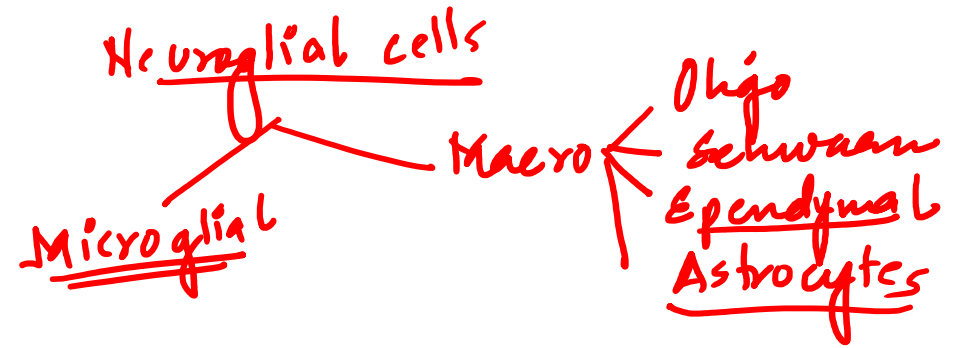
(C) Lining of urinary bladder, pharynx,
cervix X

(D) Tongue, skin, duct of parotid salivary
Glands X

143. Ependymal cells are found in

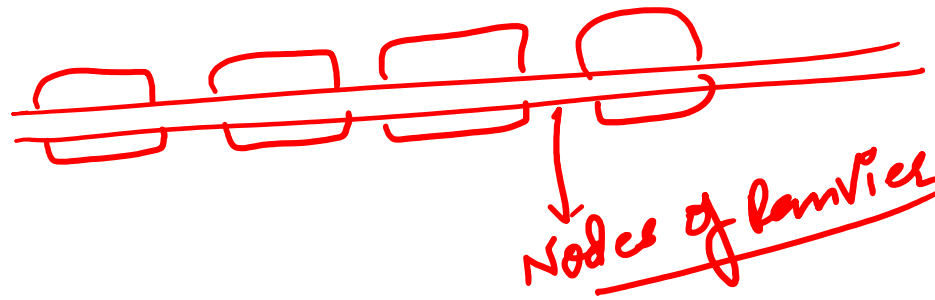
- (A) Lining of stomach X
- (B) Blood vessels X
- (C) Epididymis and vas deferens of male reproductive tract X
- ✓ (D) Lining of ventricles of brain

CSF



144. Node of Ranvier is found in

- (A) Right auricle ✗
- (B) Muscle bundles ✗
- (C) Dendrite ✗
- (D) ✓ Axon



145. Which of the following statements is correct w.r.t. white adipose tissue?

- (A) It has high concentration of iron-containing cytochrome pigment ✗
- (B) ✓ It has small cytoplasm and single large fat droplet
- (C) It is particularly found in new born baby and hibernating mammal ✗
- (D) It has many mitochondria and many small droplets of fat ✗

Brown → Mito
Fe ↑



146. Which cells of the areolar connective
tissue are involved in inflammatory
reactions and secrete histamine, serotonin
and heparin? - vasoconstrict
↳ vasodil

- (A) Fibroblasts (B) Macrophages
(C) Mast cells (D) Eosinophils

147. Tissue that often serves as a support framework for epithelium

AREOLAR

(A) Does not contain cells that secrete fibres

✓ (B) Is areolar tissue

(C) Does not contain cells that secrete matrix

(D) Also attaches skeletal muscles to bones and ligaments

148. In female cockroach, the 7th sternum is boat shaped and together with the 8th and 9th sterna forms a brood or genital pouch whose anterior part contains

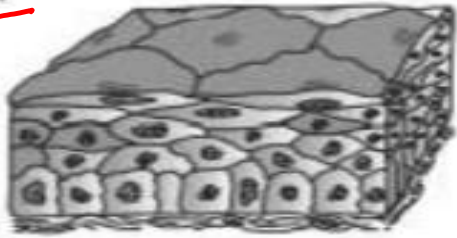
- a. Gonopore ✓
- b. Spermathecal pores ✓
- c. Openings of collateral gland ✓
- d. Anal styles ✗
- e. Anal cerci ✗

NCERT

Choose the **correct** option

- (A) a, b, c & d
- (B) a & d only
- (C) a, b & e only
- (D) ✓ a, b & c only

149. Given below is a diagram of epithelial lining



Compound
epithelium

Choose the correct option

(A) It is found in the walls of blood vessels and air sacs of lungs X

(B) It is mainly present in the inner surface of hollow organs like bronchioles and fallopian tube X

✓ (C) It covers the dry surface of skin, moist surface of buccal cavity and has a limited role in secretion and absorption

(D) It is commonly found in ducts of glands and tubular parts of nephrons and its main functions are secretion and absorption X

} simple

Compound

150. Origin of epithelial tissue is-

- (A) Ectodermal (B) Endodermal
(C) Mesodermal (D) ~~All of the above~~

151. The connective tissue that helps in maintaining the body temperature in newly born is

- (A) Dense regular tissue
- (B) ☒ Brown adipose tissue
- (C) White adipose tissue
- (D) Areolar tissue

Brown fat
↳

152. The correctly matched pair of epithelial tissue with its location is

(A) Glandular epithelium – Moist interior of oral cavity X

(B) Pavement epithelium – Inner surface of bronchi X

✓ (C) Cuboidal epithelium – Tubular parts of nephrons

(D) Ciliated epithelium – Inner lining of salivary gland X

Proximal convoluted
tube (PCT) →
DCT →

153. All of the following can be related to female cockroach, except

(A) Fat body ✓

(B) Gonapophyses ✓

✓ (C) Anal styles

(D) Ventriculus ✓

→ (C)
Cockroach

Pro

154. From the given list, how many are unpaired structures of cockroach ?



Tergites, (S) Labium, (S) Hypopharynx, (S)
Tegmina, Genital pouch, Labrum, (S)
Mandible (P) (S)

(P)
Forewing

(A) Six

(B) Seven

(C) Five

(D) Four

155. The triangular body parts of cockroach are

- (A) Thorax and anal cerci ✗
- (B) Heart chambers and female brood pouch ✗
- (C) Gizzard and labrum ✗
- (D) ✓ Head and alary muscles

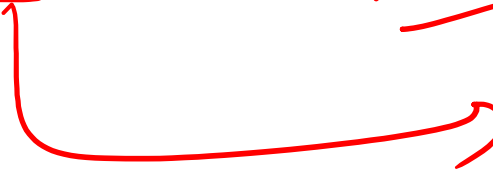
⑥



156. Keratinised stratified
epithelium can be found in
- (A) Musculo-skeletal system
 - ✓ (B) Integumentary system
 - (C) Urino-genital tract
 - (D) Conjunctival epithelium

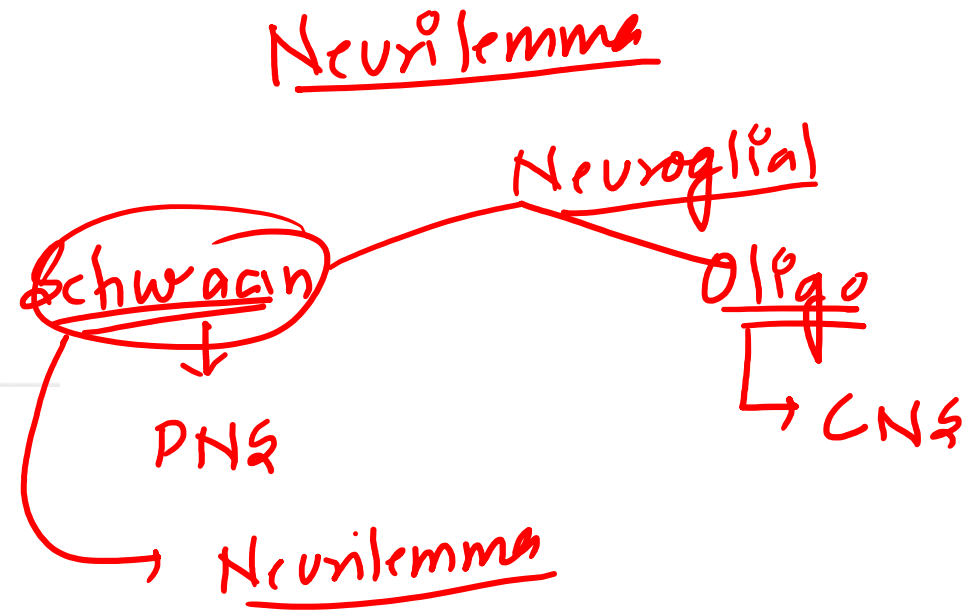
squamous

Integument
↳ SKIN



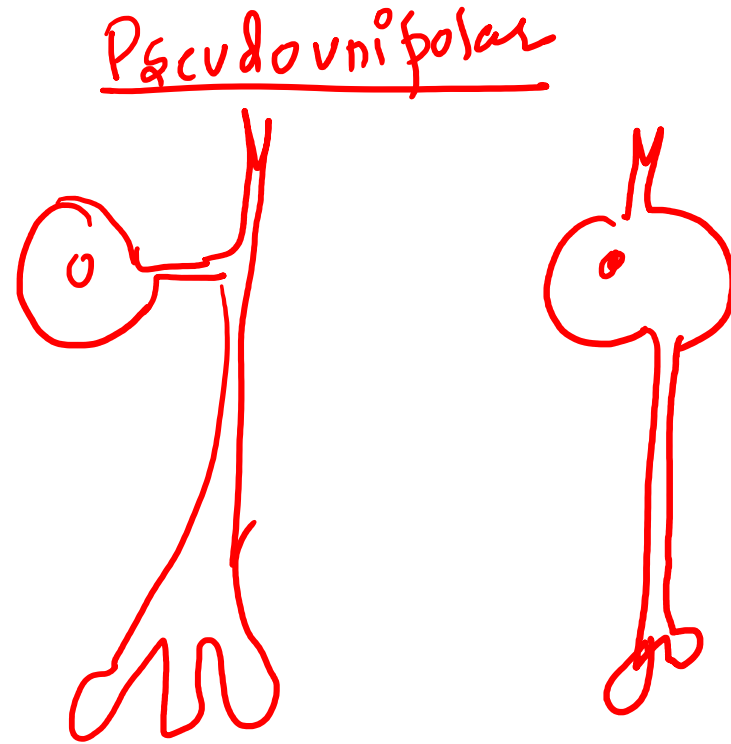
157. Neurilemma can be defined as

- (A) Plasma membrane of neuron ✓
- (B) The neuro-neuronal junctions' covering ✗
- (C) Schwann cells sheath ✓
- (D) Myelinated tracts ✗



158. Which of the information given below is correct for the neurons found in dorsal root ganglia of spinal nerves?

- (A) Have only one axon and no other processes ~~X~~
- ✓ (B) Have single process, initially further divides to form a long dendrite a short axon
- (C) Have many processes arising from cell body
- (D) Have two processes, directly arising from cell body



159. Which of the following can be related to the tissue called blood ?

(A) It has a fibre-free matrix, rich in collagen protein X

(B) It has both nucleated and non-nucleated cells, performing aerobic respiration X

(C) Blood is a specialized connective tissue

(D) It is a form of dense connective tissue, having dense arrangement due to large count of RBCs

RBC

WBC

160. Ligament connects:

(A) muscles to bone

~~(B) bone to bone~~

(C) skin to muscle

(D) both (A) and (B)

Muscle → Bone
↳ Tendon

161. The ovary of female *Periplaneta* cannot be related to

(A) Eight ovarioles/ovarian tubules

(B) Oviduct . ✓

(C) Linear series of ova ✓

✓ (D) Present in 2nd-6th thoracic segments

abdominal

162. Proventriculus in *Periplaneta* has

~~(A) Six chitinous teeth~~

(B) Salivary glands

(C) Midgut glands

(D) 6-8 pairs enteric caecae

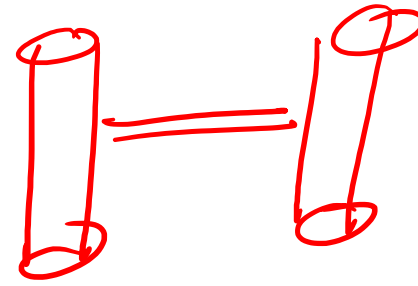
Gizzard

↓
Grinding of food

163. Find out the correct statement.

(A) Ciliated epithelium present in convoluted parts of nephric tubule absorb water

X PCT DLT



(B) Haversian canals are interconnected by canaliculi and lacunae X

(C) Abdominal wall in our body has smooth muscles skeletal

Yellow Cartilage

✓✓ (D) Elastic cartilage is present in the tip of our nose

164. Which of the following cell junctions facilitate rapid transfer of ions, small molecules between cells?

- (A) Tight junctions
- ✓ (B) Gap junctions
- (C) Adhering junctions
- (D) Hemidesmosomes

transfer / communication
↳ gap junction

165. Which of the following is incorrect regarding blood vascular system of Cockroach?

- (A) It is an open-type circulatory system ✓
- (B) Dorsal heart
- (C) 13 pairs of ostia (2 pair)
- (D) Blood is in direct contact with organs

Difficult

Vertebrate
↓
Heart
↓
Ventral

Invertebrate
↓
Cockroach
↓
Dorsal



last chamber

No ostia

166. Aerolar connective tissue connect

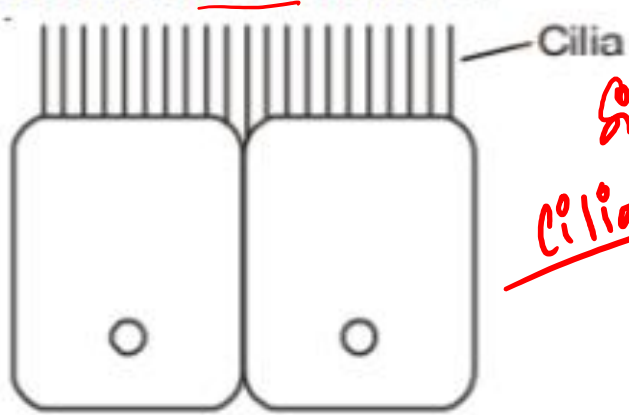
(A) Muscle to bone

☒ (B) ^{skin} Integument to muscle

(C) Bone to bone

(D) Muscle to muscle

167. Study the given structure and choose the correct w.r.t. this structure.



*Simple epi
ciliated*

(A) It represent compound epithelium

X

(B) It is avascular

(C) Present in germinal epithelium of ovary (cuboi)

(D) Present in visceral layer of Bowman's capsule

X

168. Tendon connect

(A) Bone to bone

(B) Muscle to bone

(C) Muscle to muscle

(D) Bone to cartilage

169. Which of the following cannot be related to Bone?

- (A) Osteocyte (B) Osteoclast \Rightarrow cutting
(C) Osteoblast (D) Chondroblast \rightarrow Cartilage
Mature Bone Cells
-

170. Posterior part of oesophagus is characterized by smooth
- (A) Presence of elongated spindle shaped voluntary muscles ~~X~~
 - (B) Presence of striated ~~X~~ involuntary muscle
 - ☒ (C) Presence of involuntary muscle
 - (D) Presence of unstriated voluntary muscle

Oesophagus $\left\{ \begin{array}{l} \textcircled{1/3} \rightarrow \text{\&Kkeletal} \\ \textcircled{2/3} \rightarrow \text{\&smooth} \end{array} \right.$

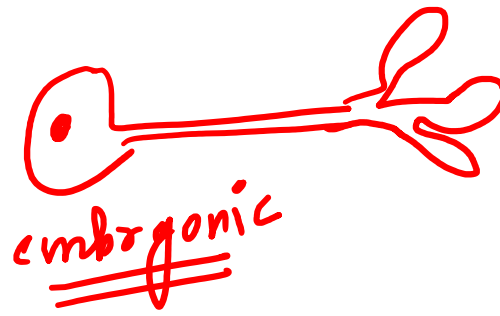
171. Unipolar neuron have

(A) One dendron and no axon ✕

✓ (B) Only axon and no dendron

(C) One dendron and one axon

(D) Two dendron and one axon ✕



172. Which of the following is associated with both male and female cockroach?
- (A) Spermatophore \rightarrow giving of sperm
 - (B) Mushroom gland \rightarrow
 - (C) Anal style \rightarrow
 - (D) Alary muscle
- $\ll \gg$
- //

173. Fertilisation in cockroach is internal and development _____.

(A) ~~External~~, ~~Paurometabolous~~

(B) ~~Internal~~, ~~Hemimetabolous~~

(C) External, Hemimetabolous

(D) Internal, Paurometabolous

Adult → wings ✓
Nymph wings

174. Pseudostratified epithelium is present in

(A) Ureter

ciliated

☒ (B) Trachea

(C) Small intestine

(D) Endothelium of glomerulus

175. Which of the following is not a feature of cockroach ?

- (A) Chitinous exoskeleton ✓
- (B) Determinate cleavage ✗
- (C) Malpighian tubules as a excretory structure ✓
- (D) 12 chambered heart ✓

(13)

176. Choose the odd one out w.r.t. origin

(A) Astrocytes

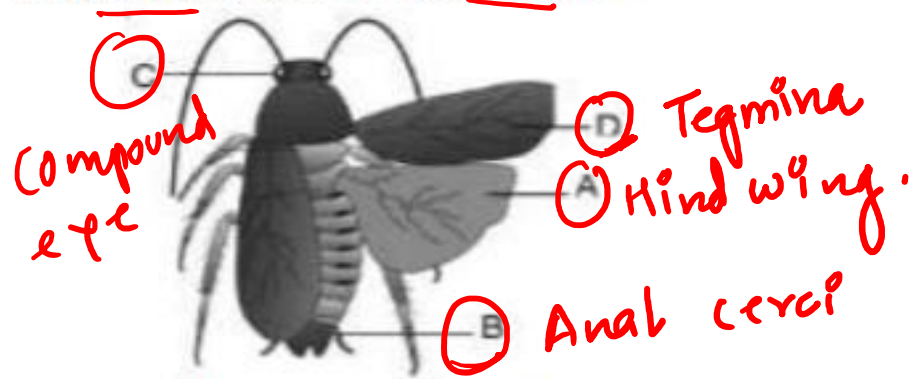
(B) Oligodendrocytes

(C) Microglial cell (mesodermal)

(D) Neuron

Ectodermal ✓

177. Given below is a figure that indicates the external features of cockroach



Choose the option which is correct for the features of the labelled structure A, B, C and D

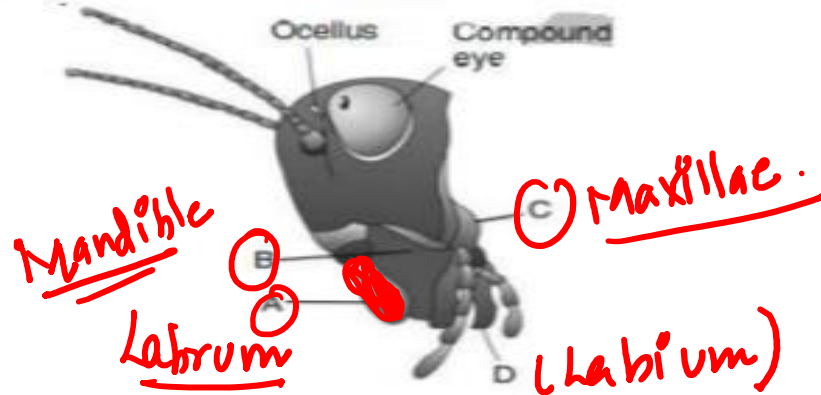
(A) A – Tegmina – Transparent, membranous wings

(B) B – Anal styles – Jointed filamentous structures present in males but absent in females

☒ (C) C – Compound eye – With the help of several ommatidia, a cockroach can receive several images of an object known as mosaic vision with more sensitivity and less resolution, being common during night.

(D) D – Fore wing – Dark opaque and leathery which are used in flight

178. Following is the labelled diagrammatic representation of head region of cockroach. Mark the exact labelled parts as A, B, C and D.



ACERT

- (A) A-Labrum, B-Mandible, C-Maxillae, D-Labium
- (B) A-Labium, B-Maxillae, C-Mandible, D-Labrum
- (C) A-Mandible, B-Labrum, C-Labium, D-Maxillae
- (D) A-Maxillae, B-Labium, C-Labrum, D-Mandible

179. Given below is a diagrammatic representation of alimentary canal of cockroach

Crop
Gizzard
Hepatic
Caecae
Malpighian



excretion

Choose the incorrect option w.r.t. the identification and labelled structures A, B, C and D

(A) A – Crop – Sac like structure used for storing of food ✓

(B) B – Proventriculus – It has an outer layer of thick circular muscles and thick inner six highly chitinous teeth which helps in grinding the food particles ✓

(C) C – Gastric caecae – Present at the junction of foregut and midgut which secretes digestive juice ✓

(D) D – Malpighian tubules – Help in removal of undigested food; present at the junction of foregut and midgut ✓

180. All the following statements are correct about the reproductive system of cockroach, but one is wrong, which one is wrong?

- (A) Male reproductive system consist of a pair of testes lying one on each lateral side in the 4th to 6th abdominal segments ✓
- (B) Mushroom gland is present in 6th-7th abdominal segments in male ✓
- (C) The development of *P. americana* is paurometabolous, nymph grows by moulting about 13 times to reach the adult form ✓
- (D) In female a pair of spermathecae are present in the 8th abdominal segment which opens into genital chamber ✓

6th