

## MORPHOLOGY

1. **Assertion(A): In Cockroach , most of the food is digested in the crop**  
**Reason(R): Crop internally lined with endoderm, which secretes most of digestive enzymes**
  - 1) Both A and R are correct and R explains A
  - 2) Both A and R are correct and R does not explains A
  - 3) A is true, R is false
  - 4) A is false but R is true
2. **Assertion(A): In Cockroach mosaic vision with more sensitivity but less resolution is present**  
**Reason(R): With the help of several Ommatidia, a cockroach can receive several images of an object**
  - 1) Both A and R are correct and R explains A
  - 2) Both A and R are correct and R does not explains A
  - 3) A is true, R is false
  - 4) A is false but R is true
3. **Assertion(A): In Cockroach , inspiration is an active process and the expiration is a passive process**  
**Reason(R): Dorsoventral muscles contracts during expiration and relax during the inspiration**
  - 1) Both A and R are correct and R explains A
  - 2) Both A and R are correct and R does not explains A
  - 3) A is true, R is false
  - 4) A is false but R is true
4. **Arrange the following structures in descending order based on their number in each ommatidium**

A) Corneagen cells	B) Retenulae	C) Semper cells	
D) Crystalline cone	E) Cells in receptor region		
1) D,A,C,E,B	2) A,C,D,B,E	3) E,B,C,A,D	4) B,E,C,A,D
5. **Arrange the following vessels in salivary glands of cockroach to flow the saliva from zymogen cells to receptacle**

A) Receptacular duct	B) Median salivary duct
C) Common salivary duct	D) Common receptacular duct
E) Ductules	
1) E,B,C,A,D	2) E,C,B,D,A
3) E,C,B,A,D	4) E,A,B,C,D
6. **Find out the correct links of the given parts in cockroach**

A) Hepatic caeca	I) 6	E) Secretary & absorptive cells
B) Malpighian tubules	II) 6-8	F) Excretion
C) Rectal papillae	III) 6 longitudinal	G) Re absorption of water
	Primary folds	
D) Plates	IV) 6 bundles	H) Grinding mill
	A	B
1)	II-E	VI-F
2)	I-G	VI-F
3)	IV-F	II-E
4)	III-H	I-G
		C
		D
		I-G
		II-E
		III-H
		IV-F
		III-H
		II-E

7. Read the following statements

I) Each ovary contains 6 ovarian tubules in female cockroach

II) Spermatophore bundles are formed in the seminal vesicles of female cockroach

III) A pair of spamatheca is present in 8th abdominal segment

In the above correct statement/s is/are

- 1) I & III                      2) II & III                      3) II only                      4) III only

8. Number of eggs in each Ootheca of cockroach

- 1) 8-10                      2) 14-16                      3) 1 or 2                      4) only 8

9. Number of moults occurs in nymph of cockroach to became adult is

- 1) 4                      2) 10                      3) 12                      4) 13

10. Chitinous asymmetrical structures surrounding the male gonopore are

- 1) Anal style                      2) Gonads                      3) Phallomeres                      4) Seminal vesicles

11. Cockroach shows one of the following metamorphism

- 1) Retrogressive metabolous                      2) Holo metabolous  
 3) Pauro metabolus                      4) None of the above

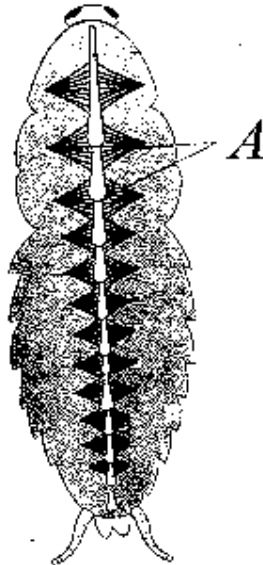
12. Newly hatched young cockroaches are called as

- 1) Larva                      2) Nymph                      3) Imago                      4) Wiggler

13. 13- Chambered tubular heart is characteristic of

- 1) Cockroach                      2) Earth worm                      3) Housefly                      4) Mosquito

14. Identify the labeled structure "A" in the following picture



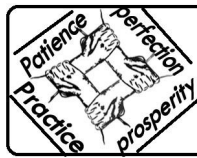
- 1) Heart                      2) Nerves                      3) Alary muscles                      4) Ligaments

15. The level of tracheolar fluid in the tracheoles of cockroach is

- 1) Always constant                      2) Decreases when the insect is active  
 3) Increases when the insect is active                      4) Decreases when the insect is inactive

16. Method of respiration in cockroach, grasshoppers etc..... in

- 1) Continuous ventilation                      2) Double ventilation  
 3) Diffusion                      4) Discontinuous ventilation



17. Most of  $CO_2$  from haemolymph goes out through

- |                             |                        |
|-----------------------------|------------------------|
| 1) Thoracic spiracles       | 2) Abdominal spiracles |
| 3) Inter segmental membrane | 4) Sclerites           |

18. Food locating olfactory sensilla are present on

- |            |                 |                   |                       |
|------------|-----------------|-------------------|-----------------------|
| 1) Antenna | 2) Labial palps | 3) Maxillary palp | 4) In all these three |
|------------|-----------------|-------------------|-----------------------|

19. Peritrophic membrane is secreted by

- |                                 |                       |
|---------------------------------|-----------------------|
| 1) Anterior part of mesenteron  | 2) Stomodaeal valve   |
| 3) Posterior part of mesenteron | 4) Wall of oesophagus |

20. The foregut of cockroach is also named as

- |                    |                |               |                |
|--------------------|----------------|---------------|----------------|
| 1) Pro ventriculus | 2) Ventriculus | 3) Stomodaeum | 4) Proctodaeum |
|--------------------|----------------|---------------|----------------|

21. Identify the correct sequence of layers in the wall of tracheae from outer to inner?

- |   |   |
|---|---|
| 1) Epithelium- Basement membrane – Intima | 2) Basement membrane-Epithelium- Intima |
| 3) Intima-Epithelium-Basement membrane    | 4) Epithelium-Intima-Basement membrane  |

22. Ganglion located above the oesophagus of cockroach is

- |                     |                       |                      |                      |
|---------------------|-----------------------|----------------------|----------------------|
| 1) Frontal ganglion | 2) Occipital ganglion | 3) Visceral ganglion | 4) Inguinal ganglion |
|---------------------|-----------------------|----------------------|----------------------|

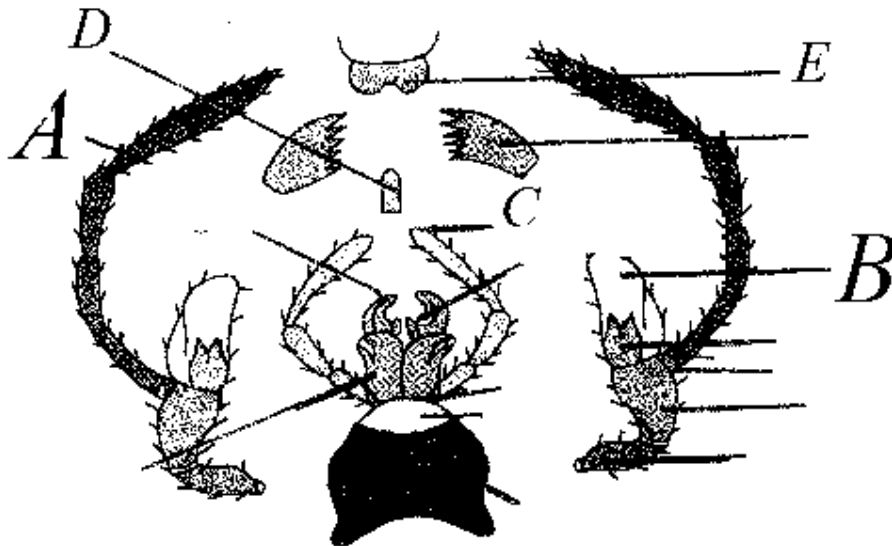
23. Which of the following chordotonal organ is sensitive to ground vibrations?

- |                    |                   |                    |          |
|--------------------|-------------------|--------------------|----------|
| 1) Tympanal organs | 2) Johnston organ | 3) Subgenual organ | 4) 1 & 2 |
|--------------------|-------------------|--------------------|----------|

24. Common feature in earth worm and cockroach is

- |                          |                              |
|--------------------------|------------------------------|
| 1) Cuticle (exoskeleton) | 2) Solid, ventral nerve cord |
| 3) Nephridia             | 4) Malpighian tubules        |

25. Mouth parts of cockroach



- |                   |             |             |             |                |
|-------------------|-------------|-------------|-------------|----------------|
| <b>A</b>          | <b>B</b>    | <b>C</b>    | <b>D</b>    | <b>E</b>       |
| 1) Maxillary palp | Labial palp | Galia       | Labrum      | Hypopharynx    |
| 2) Labial palp    | Galia       | Labrum      | Hypopharynx | Maxillary palp |
| 3) Maxillary palp | Galia       | Labial palp | Hypopharynx | Labrum         |
| 4) Labrum         | Galia       | Hypopharynx | Labial palp | Maxillary palp |

26. Assertion (A): Respiration in cockroach is called Holopneustic type

Reason(R): All the 10 pairs of spiracles are functional

- 1) Both A and R are correct and R explains A    2) Both A and R are correct and R does not explain A  
 3) A is true, R is false    4) A is false but R is true

27.  $\overset{A}{\rightarrow} + \overset{B}{\rightarrow} \rightarrow$  forms the Arthrodiaple membrane, that allow flexible movements of the body parts in cockroaches. In the above statement A and B are

- 1) Exocuticle, Epicuticle    2) Epicuticle, Endocuticle  
 3) Only Exocuticle    4) Exocuticle, Endocuticle

28. Cockroach moves on smooth surface by using

- 1) Aerolium    2) Mouth    3) Anal carci    4) Plantulae

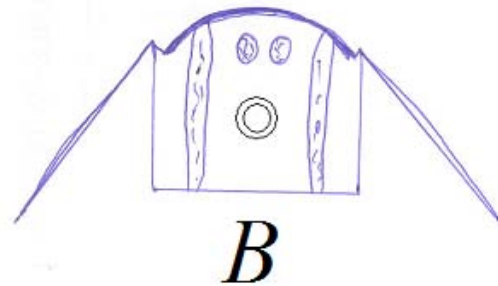
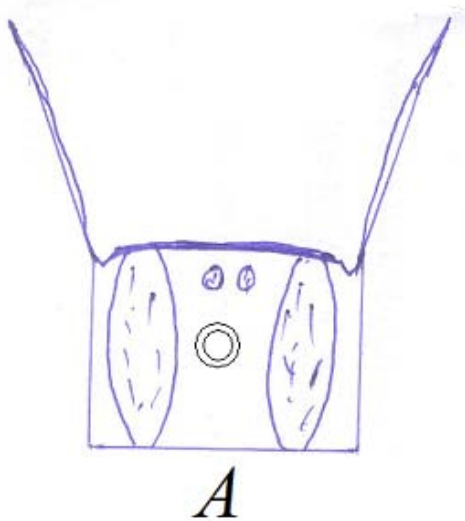
29. The schizocoelom in cockroach is restricted to the spaces around the .....

- 1) Reproductive organs    2) Complete Alimentary canal  
 3) Nerve cord    4) Only Gut

30. In a tripod of a cockroach the 'pivot' is

- 1) Absent    2) Foreleg    3) Middle leg    4) Hind leg

31. Characters:-



- |  |  |
|--|--|
| A) Depressed tergum                      | B) Contracted Dorsoventral muscles     |
| C) Contracted dorso longitudinal muscles | D) Relaxed Dorsoventral muscles        |
| E) Decreased body cavity                 | F) Increased body cavity               |
| G) Elevated wings                        | H) Depressed wings                     |
| I) Raised tergum                         | J) Relaxed dorsal longitudinal muscles |

Among the given character which are related to Pic. A

- 1) A,B,E,G,J    2) C,D,F,H,I    3) A,C,E,G,F    4) B,D,F,H,J

32. Male cockroach can be identified by the presence of

- 1) Collateral glands    2) Green glands    3) Broad abdomen    4) Anal style

33. Glossae and para glossae together constitute the .....

- 1) Ligula    2) Lingua    3) Protopodite    4) Exopodite

34. Match the following

Set-I	Set-II
I) Trophocytes	A) Storing of uric acid
II) Mycetocytes	B) Lipid secretion
III) Oenocyte	C) Storage of food
IV) Urate cells	D) Containing of symbiotic bacteria
1) I-D, II-A, -III-B, IV-C	2) I-A, II-C, III-D, IV-B
3) I-C, II-D, III-B, IV-A	4) I-B, II-C, III-A, IV-D

35. Identify the correct statement regarding brood pouch of cockroach?

- i) Gynovalvular plates are formed from 7<sup>th</sup> sternum of its abdomen
- ii) 8<sup>th</sup> sternum of abdomen forms the roof of brood pouch
- iii) 9<sup>th</sup> sternum of abdomen forms the anterior wall of brood pouch

- 1) All are true      2) Only I      3) II & III only      4) Only III

36. Match the following

Set I	Set II	Set III
I) Gynatrium	A) Between 5 <sup>th</sup> , 6 <sup>th</sup> abdominal Segments	E) Smooth muscles
II) Alary muscles	B) Re absorption of excess water	F) Striated muscles
III) Stink glands	C) Anterior parts of brood pouch	G) Emits foul smell
IV) Colon	D) Circulation	H) Fertilization
I	II	III
1) D,E	B,G	A,F
2) C,E	A,F	D,H
3) C,H	D,F	A,G
4) C,G	D,E	A,H

37. Sockets of the movable bristles of the body wall are formed by

- 1) Trichogen cells      2) Tormogen cells      3) Both 1 and 2      4) Oenocytes

38. Scolopidia are the units of

- 1) Photo receptors      2) Mechanoreceptors      3) Rheo-receptors      4) Olfactory receptors

39. Brain of cockroach is mainly

- 1) Sensory      2) Endocrine      3) Both 1 & 2      4) Motor

40. Among the following which region of Malpighian tubule is absorption in function?

- 1) Proximal      2) Middle      3) Distal      4) Both 2 & 3

1.3	2.1	3.4	4.4	5.2	6.1	7.3	8.2	9.4	10.3
11.3	12.2	13.1	14.3	15.2	16.4	17.3	18.4	19.2	20.3
21.2	22.2	23.3	24.2	25.3	26.1	27.2	28.4	29.1	30.3
31.1	32.4	33.1	34.3	35.2	36.3	37.2	38.2	39.3	40.1