



# NSEB 11<sup>th</sup> 2026

## DPP-10

### Structural Organization in Animals

1. Match the Following –

Column A		Column B	
A.	Crop	1.	Grinding of food
B.	Gizzard	2.	Storage of food
C.	Hepatic caeca	3.	Connects mouth to oesophagus
D.	Pharynx	4.	Secretes digestive juice

- (A) A-1, B-2, C-4, D-3  
 (B) A-2, B-1, C-4, D-3  
 (C) A-4, B-3, C-2, D-1  
 (D) A-3, B-4, C-1, D-2

2. Assertion & Reason -

**A:** Gizzard in cockroach performs mechanical digestion.

**R:** Its inner lining contains 6 chitinous teeth.

- (A) Both A & R true; R explains A  
 (B) Both A & R true; R doesn't explain A  
 (C) A true, R false  
 (D) A false, R true

3. Which of the following are correct about cockroach digestion?

- Hepatic caeca secrete digestive enzymes
- Midgut is lined with thin cuticle
- Crop stores food
- Gizzard secretes enzymes

- (A) 2, 3, 4                      (B) 1, 3, 4  
 (C) 1, 2, 3                      (D) All

4. Arrange the following in the path of food movement:

- Pharynx
- Crop
- Gizzard
- Oesophagus

- (A) 1 → 4 → 2 → 3      (B) 1 → 2 → 4 → 3  
 (C) 2 → 1 → 4 → 3      (D) 1 → 3 → 4 → 2

5. **A:** Haemolymph in cockroach is colourless.

**R:** It contains nucleated RBCs and platelets.

- (A) Both A & R true      (B) A true, R false  
 (C) Both false              (D) A false, R true

6. Match the Following -

Column A		Column B	
A.	Haemocoel	1.	Pores on heart chamber
B.	Alary muscles	2.	Space where blood flows freely
C.	Ostia	3.	Elongated tube with 13 chambers
D.	Heart	4.	Help pump blood into heart

- (A) A-2, B-1, C-4, D-3  
 (B) A-1, B-2, C-4, D-3  
 (C) A-2, B-4, C-1, D-3  
 (D) A-3, B-4, C-1, D-2

7. Which of the following are true about cockroach heart?

- Located on dorsal side
- Funnel-shaped chambers with ostia
- Blood flows anteriorly
- Blood is pumped into closed vessels

- (A) 1, 2, 3                      (B) 2, 3, 4  
 (C) 1, 3, 4                      (D) All

8. Spiracles in cockroach are:

- (A) Paired excretory glands  
 (B) Digestive openings  
 (C) Small pores on lateral body wall  
 (D) Tubular air sacs inside heart

9. Excretion in cockroaches are done by

- (I) Malpighian tubules  
 (II) Fat Body  
 (III) Nephrocytes  
 (IV) Urecose gland

Choose the correct options from the below:

- (A) All four                      (B) I & II only  
 (C) II & III only                (D) II, I, and III



10. Which of the following are true about cockroach nervous system?

1. Has ventral nerve cord with ganglia
2. 3 ganglia in thorax, 6 in abdomen
3. Remains functional even after head is removed
4. Head alone contains complete nervous system

(A) 2, 3, 4                      (B) 1, 3, 4  
(C) 1, 2, 3                      (D) All

11. The supra-oesophageal ganglion in cockroach sends nerves to \_\_\_\_\_ and \_\_\_\_\_.

- (A) eyes, ovary
- (B) cerci, wings
- (C) antennae, compound eyes
- (D) mouth, wings

12. Which are true about cockroach male reproductive system?

1. Testes are paired, lateral, lie in 4th-6th abdominal segments
2. Mushroom gland is accessory gland
3. Spermatophores form in seminal vesicles
4. Genital pore lies dorsally

(A) 1, 2, 3                      (B) 1, 3, 4  
(C) 2, 3, 4                      (D) All

13. **A:** Gonapophysis surround the female genital chamber.

**R:** They are keratinous and assist in egg-laying.

- (A) Both A and R true, R explains A
- (B) Both A and R true, R does not explain A
- (C) A true, R false
- (D) A false, R true

14. Match the Following –

Column A		Column B	
A.	Ovary	1.	Common oviduct
B.	Spermatheca	2.	Contains developing ova
C.	Collateral glands	3.	Secrete oothecal glue
D.	Vagina	4.	Receives spermatophores

- (A) A-2, B-4, C-3, D-1  
(B) A-1, B-2, C-4, D-3  
(C) A-4, B-3, C-2, D-1  
(D) A-3, B-4, C-1, D-2

15. Which statements are true about cockroach oothecae?

1. Each ootheca contains 14-16 eggs
2. Laid in dry, exposed areas
3. Glued to surfaces
4. Found only in males

(A) 1, 2, 3                      (B) 1, 3  
(C) 2, 4                         (D) 1, 2, 4



## Answer Key

1. (B)
2. (A)
3. (C)
4. (A)
5. (B)
6. (C)
7. (A)
8. (C)

9. (A)
10. (C)
11. (C)
12. (A)
13. (A)
14. (A)
15. (B)