



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

## DPP-11

### Structural Organization in Animals

1. **Assertion (A):** Cockroach is paurometabolous  
**Reason (R):** Its larvae develop from egg to adult via a pupal stage.

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

2. Match the Column

Column A		Column B	
A.	Testis	1.	Produces sperms
B.	Vas deferens	2.	Transports sperms
C.	Ejaculatory duct	3.	Discharges Spermatophotres
D.	Phallomere	4.	External genitalia

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

3. Which of the following structures is found only in the male reproductive system of cockroach?

- (A) Common oviduct  
 (B) Titillator  
 (C) Collateral gland  
 (D) Spermatheca

4. Which are correct regarding female cockroach reproductive system?

- Ovaries lie in 2<sup>nd</sup>-6<sup>th</sup> abdominal segments
- Each ovary contains ovarioles
- Collateral glands store spermatophores
- Ootheca is formed outside the body

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

5. Match the Following

Column A		Column B	
A.	Ovarioles	1.	Stores spermatophores
B.	Spermatheca	2.	Contain developing ova
C.	Collateral glands	3.	Aid in egg-laying
D.	Gonapophyses	4.	Secrete ootheca cement

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

6. **A:** Mushroom gland in cockroach functions as an accessory reproductive gland.

**R:** It provides nutrition to developing embryos.

- (A) Both true; R explains A  
 (B) A true; R false  
 (C) Both false  
 (D) A false; R true

7. The mode of development in cockroach is \_\_\_\_\_, which means development through \_\_\_\_\_ stages.

- (A) holometabolous, larval  
 (B) hemimetabolous, adult  
 (C) paurametabolous, nymphal  
 (D) ametabolous, embryonic

8. Select correct statements:

- Nymph has functioning wings
  - Cockroach undergoes 13 moults to reach adulthood
  - Wing pads appear before last moult
  - Nymphs resemble adults
- (A) 1, 2, 3                      (B) 1, 3, 4  
 (C) 2, 3, 4                      (D) All



9. **A:** Cockroaches are harmful insects.  
**R:** They transmit diseases by contaminating food.  
 (A) Both true, R explains A  
 (B) Both true, R doesn't explain A  
 (C) A true, R false  
 (D) Both false
10. In male genital pouch/chamber surrounded by:  
 (A) Dorsally 9<sup>th</sup> and 10<sup>th</sup> terga and ventrally by 9<sup>th</sup> sternum  
 (B) Ventrally 9<sup>th</sup> and 10<sup>th</sup> sterna and dorsally by 9<sup>th</sup> terga  
 (C) Dorsally 8<sup>th</sup> and 9<sup>th</sup> terga and ventrally by 9<sup>th</sup> sterna  
 (D) Dorsally 9<sup>th</sup> and 10<sup>th</sup> sterna and Ventrally 10<sup>th</sup> turga
11. Choose correct statement about excretion in cockroach:  
 (A) Malpighian tubules absorbs nitrogenous waste from haemolymph (coelomic fluid) and convert then into uric acid which is excreted out through mid gut.  
 (B) Malpighian tubules absorbs uric acid from haemolymph and excrete out through hind gut.  
 (C) Malpighian tubules absorbs nitrogenous waste from haemolymph and convert them into uric acid which is excreted out through hind gut.  
 (D) Malpighian tubule absorbs nitrogenous waste and uric acid from haemolymph and excrete them out through hind gut.
12. Spermatophore is \_\_\_\_\_ :  
 (A) Group of sperm glued together.  
 (B) Site of sperm storage  
 (C) A chamber in which female cockroach receives sperm  
 (D) None of these
13. In cockroach anal cerci is/are:  
 (A) One pair jointed filamentous structure present at 8<sup>th</sup> segment of both male and female  
 (B) One pair jointed filamentous structure present at 9<sup>th</sup> segment of both male and female  
 (C) One pair jointed filamentous structure present at 10<sup>th</sup> segment of both male and female  
 (D) One pair jointed filamentous structure present at 7<sup>th</sup> segment of both male and female
14. Malpighian tubule of cockroach absorbs nitrogenous waste from haemolymph and convert it into:  
 (A) Pottassium urate (B) Urea  
 (C) Trimethyle amine (D) Uric acid
15. For metamorphosis cockroach requires how many moultings:  
 (A) About 15 (B) About 13  
 (C) About 20 (D) About 25



## Answer Key

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

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

