Chapter 02 Structural Organisation in Animals

RANKER'S STUFF

Q.1 How many of the following junctions are found in epithelium tissue:
Tight junction, Gap junction, Adhering and Interdigitation
(1) Four (2) Three
(3) Two (4) One

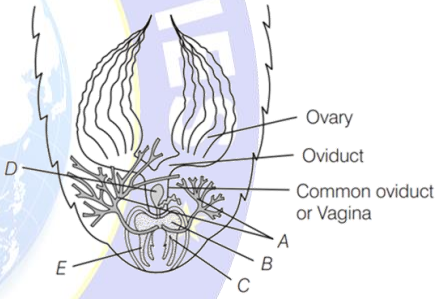
Q.2 How many of the following substances are secreted by exocrine glands?
mucus, thyroxine, saliva, earwax, insulin, oil, milk, digestive enzymes, melatonin and adrenaline:
(1) Four (2) Five
(3) Six (4) Seven

Q.3 Read the following (A-D) statements:
A. Connective tissue are most abundant and widely distributed in the body of complex animals.
B. They are named connective tissues because of their special function of linking and supporting other tissues/organs of the body.
C. They range from soft connective tissues to specialised types, which include cartilage, bone, adipose and blood.
D. The cells of connective tissue secrete modified polysaccharides, which accumulate between cells and fibres and act as matrix.
How many of the following statements are correct?
(1) Four (2) Three
(3) Two (4) One

Q.4 Connective tissues includes:
(a) Cartilage (b) Bone
(c) Adipose tissue (d) Blood
(1) a, b, and d (2) a, b and c
(3) b and d (4) a, b, c and d

Q.5 Lining of body cavities, ducts and tubes are made up of
(1) Compound epithelium
(2) Simple epithelium
(3) Cuboidal epithelium
(4) Keratinised epithelium

Q.6 Identify A to E in the given diagram of female reproductive system of cockroach



(1) A–Collaterial glands, B–Vestibulum, C–Genital chamber D–Spermatheca, E–Gonapophyses
(2) A–Vestibulum, B–Collaterial gland, C–Gonapophysis, D–Spermatheca, E–Genital chamber
(3) A–Collaterial gland, B–Genital chamber, C–Vestibulum, D–Spermatheca E–Gonapophyses
(4) A–Genital chamber, B–Spermatheca, C–Collaterial gland, D–Gonapophyses, E–Vestibulum

Q.7 What external changes are visible after the last moult of a cockroach nymph?
(1) Forewings develop
(2) Anal cerci develop
(3) Hindwings develop
(4) Both A and C

Q.8 Which of the following is appropriate sequence of organs in the alimentary canal of cockroach starting from mouth:

(1) Pharynx → Oesophagus → Gizzard → Crop → Ileum → Colon → Rectum

(2) Pharynx → Oesophagus → Gizzard → Ileum→ Crop → Colon → Rectum

(3) Pharynx → Oesophagus → Ileum → Crop → Gizzard → Colon → Rectum

(4) Pharynx → Oesophagus → Crop → Gizzard → Ileum → Colon → Rectum

Q.9 Consider the following statements.

I. External ears are present in frog, only tympanum with internal ears aids in hearing.

II. The eyes of frog possess single unit hence, are simple.

Select the correct option:

(1) Both I and II are true

(2) I is true, II is false

(3) Both I and II are false

(4) I is false, II is true

Q.10 A full complement of the cockroach's mouthparts includes

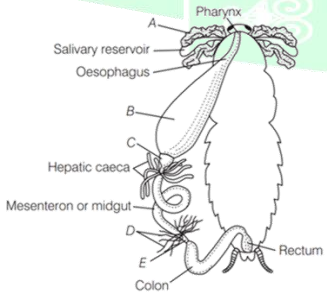
(1) labrum and labium

(2) labium, labrum and tongue

(3) labrum, mandibles, maxilla and labium

(4) labrum, maxilla and labium

Q.11 Given below is the figure of alimentary canal of cockroach. Identify A to E and choose the correct combination of A to E.



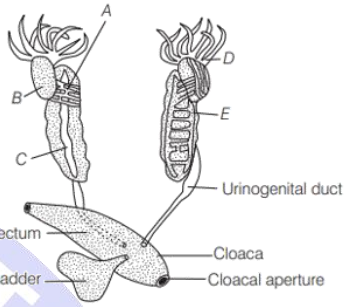
(1) A–Salivary gland, B–Gizzard, C–Crop, D–Villi, E–Caecum

(2) A–Salivary gland, B–Crop, C–Gizzard, D–Malpighian tubules, E–Ileum

(3) A–Salivary gland, B–Gizzard, C–Malpighian tubule, D–Cilia, E–Ileum

(4) A–Salivary gland, B–Crop, C–Malpighian tubule, D–Gizzard, E–Ileum

Q.12 Identify A, B, C and D in the given figure of male reproductive system of frog.



(1) A-Fat bodies, B-Testis, C-Ureters, D-Vasa efferentia, E-Kidney

(2) A-Nephrons, B-Testis, C-Ureters, D-Villi, E-Kidney

(3) A-Vasa efferentia, B-Testis, C-Adrenal gland, D-Fat bodies, E-Kidney

(4) A-Mesorchium, B-Testis, C-Adrenal gland, D-Fat bodies, E-Kidney

Q.13 Match the following columns with reference to frog:

Column I	Column II
A. Endocrine gland	1. Respiratory organ
B. Skin	2. Excretory system
C. Cloaca	3. Thymus
D. Cranium	4. Brain box
	5. Nasal epithelium

Choose the correct answer from the options given below:

	A	B	C	D
(1)	2	3	5	1
(2)	1	2	3	5
(3)	3	1	2	4
(4)	4	3	2	1

14. What was the reason behind maintenance of webbed feet in the frogs though they spend most of their time on land?

(1) Swimming

(2) Navigating through water

(3) Protection

(4) Both a and b

Q.15 During Laboratory investigation in frogs if we remove urinogenital duct, what physiological processes will not continue to happen in that frog anymore?
(1) Digestion and absorption
(2) Detoxification and Elimination
(3) Ejaculation and Urine elimination
(4) Respiration and ejaculation

Q.16 The number of abdominal segments present in cockroaches, both male and female, are
(1) 9 and 10, respectively
(2) 10 and 9, respectively
(3) 10 in both
(4) 9 in both

Q.17 Match the following columns and choose the correct option:

	Column-I		**Column-II**
1.	Excretory system	a.	Spiracles
2.	Blood vascular system	b.	Open type
3.	Respiratory system	c.	Ganglia
4.	Nervous system	d.	Malphigian tubules

(1) 1– b, 2-d, 3- a, 4- c
(2) 1-d, 2-b, 3-a, 4-c
(3) 1-d, 2 - b, 3-c, 4- a
(4) 1-b, 2 -d, 3-c, 4– a

Q.18 Read the following statements and choose the correct option:
Statement-I: The nymphs of cockroach look very much like adults.
Statement-II: Heart is differentiated into funnel shaped chambers with ostia on either side.
(1) Both statements are correct
(2) Both statements are incorrect
(3) Statement I correct but statement II is incorrect
(4) Statement II correct but statement I is incorrect

Q.19 Read the following statements about cockroach:
I. Externally segmented into head, thorax and abdomen
II. Chitinous exoskeleton covers the body
III. The exoskeleton is made up of hardened sclerites.
IV. Tracheal system (opening through 10 pairs of spiracles).
How many statements are correct?
(1) One (2) Three
(3) Two (4) Four

Q.20 Select the correct option with respect to cockroaches.
(1) Malpighian tubules convert nitrogenous wastes into uric acid.
(2) Males bear short anal styles
(3) Nervous system comprises of a dorsal nerve cord and ten pairs of ganglia.
(4) All of the above

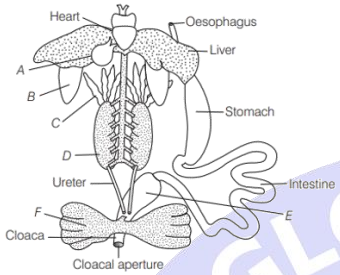
Q.21 In female frog duct connecting kidney to bladder or cloaca is known as ureter but in male frog it is known as urino-genital duct. Choose the most appropriate option.
(a) Because female frog have separate duct (oviduct) to pass eggs into cloaca
(b) Because female frog don't have separate duct (oviduct) to pass eggs into cloaca
(c) Because male frog dependent on ureter to pass sperms which constitute urinogenital duct.
(d) Both a and c

Q.22 Which one of the following statements is not correct?
I. The vascular system of frog is well-developed open type.
II. The excretory system consists of a pair of kidneys, ureters, cloaca and urinary bladder.
III. The thin-walled urinary bladder is present ventral to the rectum which also opens in the cloaca.
IV. The blood vascular system involves heart, blood vessels and blood.
(1) I only (2) I and III
(3) I and IV (4) I, II and IV

Q.23 Given below are two statements:
Statement-I: Male reproductive system in frog consists of a pair of testes, vasa efferentia (which opens into Bidder's canal), urinogenital duct and cloaca.
Statement-II: In frog well-developed excretory system is absent (kidneys, ureters, a urinary bladder and cloaca).

(1) Both statement I and statement II are true
(2) Both statement I and statement II are false
(3) Statement I is correct but statement II is false
(4) Statement I is incorrect but statement II is true

Q.24 Given below is the diagram of internal organs of frog. Identify A to F.



(1) A-Gall bladder, B-Lungs, C-Testis, D-Kidney, E-Urethra, F-Urinary bladder
(2) A-Gall bladder, B-Lungs, C-Fat bodies, D-Rectum, E- Kidney, F-Urinary bladder
(3) A-Gall bladder, B-Lungs, C-Ovary, D-Kidney, E-Ileum, F-Urinary bladder
(4) A-Gall bladder, B-Lungs, C-Fat bodies, D-Kidney, E-Rectum, F-Urinary bladder

Q.25 Match the following columns with reference to frog:

A. Respiratory organ	1. Endocrine gland
B. Excretory system	2. Skin
C. Thymus	3. Cloaca
D. Brain box	4. Cranium
E. Nasal epithelium	5. Smell

Choose the correct answer from the options given below:

	A	B	C	D	E
(1)	2	3	1	4	5
(2)	1	2	3	4	5
(3)	5	4	3	2	1
(4)	4	3	2	1	5

Q.26 Forewings of the cockroach is also known as:
(1) tegmina (2) spiracles
(3) tergia (4) spiracles and tergia

Q.27 In cockroach, excretion is brought about by
A. Phallic gland B. Uricose gland
C. Nephrocytes D. Fat body
E. Collaterial glands.

Choose the incorrect answer from the options given below:
(1) B, C and D only
(2) Band D only
(3) A and E only
(4) A, Band E only

Q.28 Read the following statements and choose the correct option:
Statement-I: Cockroach show the phenomenon of sexual dimorphism.
Statement-II: Female cockroach produces 9-10 ootheca each containing 14-16 fertilised eggs.
(1) Both statements are correct
(2) Both statements are incorrect
(3) Statement I correct but statement II is incorrect
(4) Statement II correct but statement I is incorrect

Q.29 Match the following columns and choose the correct option:

Column-I	Column-II
1. Testes	a. 2nd – 6th segment
2. Mushroom shaped gland	b. 6th segment
3. Ovaries	c. 4th - 6th segment
4. Spermatheca	d. 6th – 7th segment

(1) 1- a, 2-d, 3-c, 4-b
(2) 1- c, 2- d, 3- a, 4 -b
(3) 1- a, 2 - c, 3-b, 4-d
(4) 1 - C, 2-b, 3-a, 4-d

Q30 Read the following statements about cockroach
I. The alimentary canal present in the body cavity is divided into three regions i.e., foregut, midgut and hindgut.
II. Females bear a pair of short, thread like anal styles which are absent in males.
III. In only males, the 10th segment bears a pair of jointed filamentous structures called anal cerci.
IV. Antennae have sensory receptors that help in monitoring the environment.
How many statements are incorrect?
(1) One (2) Three
(3) Two (4) Four

31. Match the following columns:

Column-I

A. Benefits of frogs for mankind
B. Ecological role of frogs
C. Example of frog utilization

Column-II

1. Eating insects and protecting crops
2. Consumption of frog legs as food by humans
3. Maintaining ecological balance important link between food chain and food web.

Options:

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

Q.32 Find out the pair in reference to the frog which is not correctly matched.

(1) organs of touch – Sensory papillae
(2) ear is an organ of– hearing as well as balancing
(3) Vasa efferentia – 10-12 in number
(4) Vision – nictating membrane

Q.33 Which of the following statements is/are correct with respect to frog.

I. Frogs respire on land and in the water by two different methods.
II. Digestion of food takes place by the action of HCl and gastric juices secreted from the walls of the stomach.
III. Oesophagus is a short tube that opens into the stomach which in turn continues as the intestine, rectum and finally opens outside by the cloaca.
IV. The alimentary canal is short because frogs are carnivores and hence the length of intestine is reduced.

How many of the above statements are correct?

(1) One (2) Two
(3) Three (4) Four

Q.34 Select the correct route for the passage of sperms in male frogs.

(1) Testes → Bidder's canal → Kidney → Vasa efferentia → Urinogenital duct → Cloaca
(2) Testes → Vasa efferentia → Kidney → Seminal vesicle → Urinogenital duct → Cloaca
(3) Testes → Vasa efferentia → Bidder's canal → Ureter → Cloaca
(4) Testes → Vasa efferentia → Kidney → Bidder's canal → Urinogenital duct → Cloaca

Q.35 **Assertion:** The development of *P. americana* is Hemimetabolous.

Reason: There is development through nymphal stage. The nymphs look very much like adults.

(1) Assertion and reason are true and reason is the correct explanation of the assertion.
(2) Assertion and reason are true but reason is not the correct explanation of the assertion.
(3) If assertion is true but reason is false.
(4) If reason is true but assertion is false.

Q.36 Read the following statements and choose the incorrect statement.

(1) The compound eyes are situated at the ventral surface of the head.
(2) Cockroaches are dioecious and both sexes have well developed reproductive organs.
(3) Ootheca is a dark reddish to blackish brown capsule.
(4) All statements are correct

Q.37 Both sexes of cockroaches have a jointed filamentous structure on their 10th segment. Select the correct option:

(1) anal style (2) anal cerci
(3) gonapophysis
(4) spermathecal pores

Q.38 **Assertion (A):** Female cockroach produces 15-16 ootheca bearing developing embryos.

Reason (R): The production of 1 oothecae by female cockroaches is an evolutionary adaptation aimed at ensuring the survival and proliferation of the species in a wide range of environments.

(1) Assertion and reason are true and reason is the correct explanation of the assertion
(2) Assertion and reason are true but reason is not the correct explanation of the assertion
(3) If assertion is true but reason is false
(4) If reason is true but assertion is false

Q.39 **Assertion (A):** Frogs have webbed feets.
Reason (R): Degree of webbing is directly proportional to the amount of time they spend in water.
(1) If both A and R are true and R is the correct explanation of A.
(2) If both A and R are true, but R is not the correct explanation of A.
(3) If A is true, but R is false.
(4) If A is false, but R is true

Q.40 **Assertion (A):** Only few Frogs have a three-chambered heart.
Reason (R): The three-chambered heart in frogs allows for efficient separation of oxygenated and deoxygenated blood.
(1) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
(2) Both Assertion and Reason are true, but Reason is NOT the correct explanation of Assertion.
(3) Assertion is true, but Reason is false.
(4) Assertion is false, but Reason is true

Q.41 **Assertion (A):** Tadpoles undergo metamorphosis to transform into adult frogs.
Reason (R): Metamorphosis is a developmental process where tadpoles undergo significant morphological and physiological changes to acquire adult frog characteristics.
(1) If both A and R are true and R is the correct explanation of A.
(2) If both A and R are true, but R is not the correct explanation of A.
(3) If A is true, but R is false.
(4) If A is false, but R is true.

Q.42 **Assertion (A):** Frogs have bulging eyes.
Reason (R): Bulging eyes help in seeing in different directions without moving their heads.
(1) Both assertion and reason are true, and the reason is the correct explanation of the assertion.
(2) Both assertion and reason are true, but the reason is not the correct explanation of the assertion.
(3) Assertion is true, but the reason is false.
(4) Assertion is false, but the reason is true.

Q.43 **Assertion (A):** Cockroach show the phenomenon of sexual dimorphism.
Reason (R): Wings extend beyond the tip of the abdomen only in female cockroach.
(1) Assertion and reason are true and reason is the correct explanation of the assertion.
(2) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(3) If assertion is true but reason is false.
(4) If both assertion and reason are false.

Q.44 **Assertion (A):** Specialization of cells is advantageous for the organisms.
Reason (R): It increases the operational efficiency of an organism.
(1) Assertion and reason are true and reason is the correct explanation of the assertion.
(2) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(3) If assertion is true but reason is false.
(4) If both assertion and reason are false.

Q.45 **Assertion (A):** The squamous epithelium is made of a single thin layer of flattened cells with irregular boundaries.
Reasons (R): They are found in wall of blood vessels and air sacs of lungs.
(1) Assertion and reason are true and reason is the correct explanation of the assertion.
(2) If both assertion and reason are true but reason is not the correct explanation of the assertion.
(3) If assertion is true but reason is false.
(4) If both assertion and reason are false.

ANSWER KEY

RANKER'S STUFF

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	3	1	4	2	3	4	4	4	3	2	3	3	4	3
Que.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Ans.	3	2	1	4	4	4	1	3	4	1	1	3	1	2	3
Que.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
Ans.	3	4	4	4	4	1	2	4	2	4	1	1	3	1	2