INDIAN SCHOOL AL WADI AL KABIR

CLASS: XI	**DEPARTMENT: SCIENCE 2024 – 2025** **SUBJECT: BIOLOGY**	**DATE: 29.08.24**
WORKSHEET NO. 7	**TOPIC: ANIMAL KINGDOM**	**NOTE:** **A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS

1. Which class has the largest number of animals?
   a) Fishes
   b) Insects
   c) Reptiles
   d) Mammals
2. Salamander belongs to the class:
   a) Pisces
   b) Aves
   c) Reptiles
   d) Amphibian
3. Flame cells are the excretory structures for:
   a) Annelida
   b) Coelentrates
   c) Platyhelminthes
   d) Echinodermata
4. Phylum Porifera is classified based on:
   a) Branching
   b) Symmetry
   c) Spicules
   d) Reproduction

5. The canal system in sponges develops due to:

   a) Porous walls
   b) Gastrovascular system
   c) Reproduction
   d) Folding of inner walls

6. Select the correct pair:

   a) Arthropoda- silver fish
   b) Pisces- jelly fish
   c) Echinodermata- cuttle fish
   d) Mollusca- star fish

7. Cnidarians exhibit two basic body forms called polyp and medusa, this property is called
   a) Metagenesis
   b) Metamerism
   c) Symmetry
   d) Oogenesis

8. The following is not the characteristic of Chordates.
   a) The presence of a notochord
   b) A dorsal hollow nerve cord
   c) They possess a post anal tail and a closed circulatory
   d) These are radially symmetrical, diploblastic and acoelomate

9. Ascaris is characterized by:
   a) Presence of true coelom and metamerism
   b) Presence of true coelom but the absence of metamerism
   c) Absence of true coelom and metamerism
   d) Absence of true coelom but the presence of metamerism

10. Notochord occurs throughout life and all through the length of the body in:
    a) Cephalochordates
    b) Hemichordates
    c) Urochordata
    d) Vertebrata

11. Which of the following characters is not typical to class Mammalia?
    a) Alveolar lungs
    b) Seven cervical vertebrae
    c) Thecodont dentition
    d) Ten pairs of cranial nerves

For the following questions two statements are given, one labelled Assertion (A) and the other labelled Reason (R).Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

i) Both A and R are true and R is the correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

12. Assertion(A): Ctenophores, commonly known as comb jellies are exclusively marine.
    Reason(R): Bioluminescence, the property of a living organism to emit light is well-marked in ctenophores**.**
13. Assertion(A): Sponges have a water transport or canal system.
    Reason(R): This pathway of water transport is helpful in food gathering, respiratory exchange and removal of waste.
14. Assertion(A): Cold blooded animals do not have fat layer.
    Reason(R): Cold blooded animals use their fat for metabolic process during hibernation.

II. VERY SHORT QUESTIONS (2M):

15. What are the different levels or grades of the organisation?
16. Provide a technical term for the following:
    a) Blood filled cavity in arthropods
    b) A stinging organ of jellyfish
    c) Free-floating form of Cnidaria
    d) Lateral appendages in aquatic annelids
17. What do you understand about metagenesis? Explain with an example.
18. What is bioluminescence? Elaborate with an example.
19. What do you mean by the diploblastic organisation in animals?
20. What is the triploblastic organisation?

III. SHORT ANSWER TYPE QUESTIONS: (3M)

21. Differentiate between:
    a) Open and closed circulatory system.
    b) Acoelomate and Pseudocoelomate
    d) Notochord and nerve cord
22. What are the reasons that you can think for the Arthropoda to constitute the largest group of the animal kingdom?
23. How important is the presence of air bladder in Pisces?
24. What are the difficulties that you would face in classification of animals, if common fundamental features are not taken into account?

IV. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS

25. On a rainy day, Raghav found small brownish worm like animals crawling slowly over the ground of his school. On close examination he found that the animal has faintly segmented body.

    a) What is the possible identity of the animal? Name the phylum to which it belongs.
    b) Why is it seen only in the rainy season?
    c) Give two characteristic features of this organism.
    d) What is its ecological importance?

V. LONG ANSWER TYPE QUESTIONS. (5M)

26. If you are given a specimen, what are the steps that you would follow to classify it?
27. How useful is the study of the nature of body cavity and coelom in the classification of animals?
28. What are the modifications that are observed in birds that help them fly?
29. Distinguish between intracellular and extra-cellular digestion.

	ANSWER KEY
I.	**OBJECTIVE TYPE QUESTIONS:**
1.	b) Insects
2.	d) Amphibian
3.	c) Platyhelminthes
4.	c) Spicules
5.	b) Gastrovascular system
6.	a) Arthropoda- silver fish
7.	a) Metagenesis
8.	d) These are radially symmetrical, diploblastic and acoelomate
9.	c) Absence of true coelom and metamerism
10.	a) Cephalochordates
11.	d) Ten pairs of cranial nerves
12.	ii) Both A and R are true but R is not the correct explanation of the assertion.
13.	i) Both A and R are true and R is the correct explanation of the assertion.
14.	i) Both A and R are true and R is the correct explanation of the assertion.
II.	**VERY SHORT QUESTIONS (2M):**
15.	a) Cellular level b) Tissue level c) Organ level d) Organ- system level
16.	a) Haemocoel b) Nematocysts c) Medusa d) Parapodia
17.	The phenomenon in which one generation of plants and animals reproduces asexually, followed by a sexually reproducing generation is known as Metagenesis. For example, Coelenterates.

18.	Bioluminescence is known as the production and emission of light by a living organism. It is widely observed in marine animals and some fungi. Additionally, a few terrestrial invertebrates. Jellyfish and fireflies exhibit this phenomenon known as bioluminescence.
19.	The organisation in which cells are arranged into two embryonic layers, external ectoderm and internal endoderm, is called diploblastic organisation. Animals with this organisation are called diploblastic animals.
20.	If the developing embryo has a third germinal layer, i.e., mesoderm, in between the ectoderm and endoderm. Then, animals with this organisation are called triploblastic animals.
III	**SHORT ANSWER TYPE QUESTIONS: (3M)**
21.	a) Open type in which the blood is pumped out of the heart and the cells and tissues are directly bathed in it. E.g.: Arthropoda, Mollusca and Hemichordata. Closed type in which the blood is circulated through a series of vessels of varying diameters (arteries, veins and capillaries). E.g.: Annelida and Chordata. b) Acoelomate: The animals in which the body cavity is absent are •called acoelomates, e.g., Porifers, Coelenterates, Ctenophores and Platyhelminthes. **Pseudocoelomate**: In some animals, the body cavity is not lined by mesoderm, instead, the mesoderm is present as scattered pouches in between the ectoderm and endoderm. E.g., Aschelminthes c) Notochord is a mesodermally derived rod-like-structure formed on the dorsal side during embryonic development in some animals and it is the part of skeletal system. . Nerve cord is the part of nervous system.
22.	• They are the first phylum to have developed the organ level of organisation. • They have highly developed sensory organs like antennae, eyes (compound and simple). • Their body is covered by chitinous exoskeleton which helps them survive extreme conditions.
23.	Bony fishes have a sac-like outgrowth, the swim bladder also called air bladder, that arises as an outgrowth from the dorsal wall of oesophagus. It is hydrostatic in function. It regulates buoyancy and helps them to swim up and down, thus preventing them from sinking. In some species air bladder also helps in respiration. It also serves as resonating chamber to produce or receive sound.
24.	(i) Animals having different levels of organisation would have been placed in same group. E.g., Sponges and Cnidarians having same cellular and tissue level of organisation respectively. (ii)Animals showing different types of germinal layers would have been placed together, as diploblastic cnidarians and triploblastic platyhelminthes. (iii)Animals having different body symmetry would have been placed together, as coelenterates with radial symmetry and platyhelminthes with bilateral symmetry.
IV	**SOURCE-BASED/ CASE STUDY-BASED QUESTIONS:**
25.	(i) The identity of crawling animal is the earthworm. It belongs to the Phylum Annelida. (ii) It lives in burrows inside the soil of lawns or fields. In rainy season when the burrows gets filled with water, the earthworms come outside. (iii) -They have a long and segmented body. - Annelids are bilaterally symmetrical.

- They are triploblastic.
- They exhibit organ system grade of organisation, showing organ differentiation.

(iv) -They help loosen up the soil and aerate it as they burrow deep.
- This aids in the proper aeration of the roots of the plants, making them grow deeper and grow well.

V. LONG ANSWER TYPE QUESTIONS. (5M)

26. (A)Mode of nutrition – It can be autotrophic, holozoic, saprophytic or parasitic.
(B)Complexity of body structure – Whether the specimen is unicellular or multicellular.
(C)Presence or absence of membrane bound organelles.
(D)Body symmetry, i.e., the plane by which organism can be divided into two equal halves.
(E)Presence or absence of coelom, it can be acoelomates, pseudoco elomates, eucoelo- mates.
(F)Phylogenetic relationship.

27. Coelom is a fluid filled space between the body wall and digestive tract. The presence or absence of body cavity or coelom plays a very important role in the classification of animals. Animals that possess a fluid filled cavity between body wall and digestive tract are known as coelomates. Annelids, mollusks, arthropods, Echinodermata's, and chordates are examples of coelomates. On the other hand, the animals in which the body cavity is not lined by mesoderm are known as pseudocoelomates. In such animals, mesoderm is scattered in between ectoderm and endoderm. Aschelminthes is an example of pseudocoelomates. In certain animals, the body cavity is absent.

28. . Birds have adapted to aerial mode of life through the following modifications:
• Streamlined body for rapid and smooth movement
• Covering of feathers for insulation
• Forelimbs modified into wings and hind limbs used for walking, perching, and swimming
• Presence of pneumatic bones to reduce weight
• Presence of additional air sacs to supplement respiration

29.

Intracellular digestion	Extracellular digestion
The digestion of food take place within the cell.	The digestion take place outside the cell in the cavity of alimentary canal.
Digestive enzymes are secreted by the surrounding cytoplasm into the food vacuole.	Digestive enzymes are secreted by special cells into the cavity of alimentary canal.
Products of digestion are diffused into the cytoplasm.	Products of digestion diffuse across the intestinal wall into different parts of the body.
It is a less efficient method and it does not show the regional differentiation.	It is a more efficient method and shows the regional differentiation.
It occurs in unicellular organisms.	It occurs in multicellular organisms.

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