NEET Important Questions with Solutions from Animal Kingdom

Q.1. Which of the following phylum is pseudocoelomate?

A) Aschelminthes

B) Arthropoda

C) Annelida

D) Platyhelminthes

Answer: Aschelminthes

Solution: The roundworms belong to phylum Aschelminthes. They have the salient features like:

- They show bilateral symmetry, organ-system level organisation.
- They are pseudocoelomate. The body cavity is not lined mesoderm.
- They do not have circulatory and respiratory systems.
- Protonephridia are the excretory organs.

Q.2. "Corals" belong to the phylum:

A) Porifera

B) Coelenterata

C) Mollusca

D) Echinodermata

Answer: Coelenterata

Solution: The phylum Cnidaria or Coelenterata encompass animals which are mainly marine with the salient features:

1. Diploblastic body.
2. Radial symmetry.
3. Presence of stinging cells.
4. Many of them showing metagenesis.

Corals, *Hydra*, *Obelia*, *Aurelia*, etc. are from this phylum.

Q.3. Members of phylum Arthropoda lack one of the following features:

A) External skeleton made of chitin

B) Compound eyes

C) Excretion by Malpighian tubule

D) Usually a close type of blood vascular system

Answer: Usually a close type of blood vascular system

Solution: Arthropoda is the largest phylum of Animalia which includes insects.

Some features of this phylum are:

- They have an organ-system level of organisation.
- They are bilaterally symmetrical, triploblastic, segmented, and coelomate animals.
- The body of arthropods is covered by a chitinous exoskeleton.
- The body consists of the head, thorax, and abdomen.
- They have jointed appendages. Respiratory organs are gills, book gills, book lungs, or tracheal system.
- **The circulatory system is of open type, there are no vessels to contain the blood**, and it flows freely through the cavities of the body.
- Sensory organs like antennae, eyes (compound and simple), statocysts are present.

Examples: Economically important insects – *Apis* (Honey bee), *Bombyx* (Silkworm), *Laccifer* (Lac insect) Vectors – *Anopheles*, *Culex,* and *Aedes* (Mosquitoes) Gregarious pest – *Locusta* (Locust) Living fossil – *Limulus* (King crab).

Q.4. Which of the following is a mollusc?

A) Sea-horse

B) Sea-mouse

C) Sea-hare

D) Sea-cow

Answer: Sea-hare

Solution: Mollusca is the second-largest animal phylum. Molluscs are terrestrial or aquatic having an organ-system level of organisation. They are bilaterally symmetrical, triploblastic and coelomate animals. Body is covered by a calcareous shell and is unsegmented with a distinct head, muscular foot and visceral hump. A soft and spongy layer of skin forms a mantle over the visceral hump. The space between the hump and the mantle is called the mantle cavity in which feather like gills are present. They have respiratory and excretory functions. The anterior head region has sensory tentacles. The mouth contains a file-like rasping organ for feeding, called radula.They are usually dioecious and oviparous with indirect development.

Examples: *Pila* (Apple snail), *Pinctada* (Pearl oyster), *Sepia* (Cuttlefish), *Loligo* (Squid), *Octopus* (Devil fish), *Aplysia* (Seahare), *Dentalium* (Tusk shell) and *Chaetopleura* (Chiton).

Q.5. Sea-squirt is a common name of:

A) *Balanoglossus*

B) *Herdmania*

C) *Amphioxus*

D) *Ascidia*

Answer: *Herdmania*

Solution: *Herdmania* is commonly known as a sea squirt. It is an exclusively marine organism. They belong to the subphylum Tunicata or Urochordata. They are found in shallow water. These are solitary and sedentary organisms that are attached to a rocky sea bottom. They are embedded in sandy flour. It is a ciliatory feeder and a microphagus animal. It is hermaphrodite and fertilisation is external and development is indirect.

Q.6. The amphibians are characterized by:

A) Only aquatic habit

B) Monochondylar skull

C) Scaleless, smooth moist and glandular skin

D) Claws present at the tip of digits

Answer: Scaleless, smooth moist and glandular skin

Solution: Amphibians are ectothermic, tetrapod vertebrates. They live in aquatic as well as terrestrial habitats. Most of them have two pairs of limbs. The body is divisible into the head and trunk. The tail may be present in some. The amphibian skin is moist. The eyes have eyelids. A tympanum represents the ear. The alimentary canal, urinary and reproductive tracts open into a common chamber called cloaca which opens to the exterior. Respiration is by gills, lungs, and skin.

Examples: *Bufo* (Toad), *Rana* (Frog), *Hyla* (Tree frog), *Salamandra* (Salamander), *Ichthyophis* (Limbless amphibia).

Q.7. The character found only in mammals:

A) Homeothermy

B) Viviparity

C) Dicondylic skull

D) Diaphragm

Answer: Diaphragm

Solution: The mammalian characteristic is the presence of milk-producing glands (mammary glands) by which the young ones are nourished. They have two pairs of limbs, adapted for walking, running, climbing, burrowing, swimming, or flying. The skin of mammals is unique in possessing hair. External ears or pinnae are present. Different types of teeth are present in the jaw. The heart is four-chambered. They are homoeotherm. Respiration is by lungs. Sexes are separate and fertilisation is internal. They are viviparous with few exceptions and development is direct.

The diaphragm is the only organ, which only and all mammals have and without which no mammals can live. It is a sheet of internal skeletal muscle that extends across the bottom of the thoracic cavity. The diaphragm separates the thoracic cavity containing the heart and lungs, from the abdominal cavity and performs an important function in respiration.

Q.8. Which of the following characteristic is shared by all arthropods?

A) Complete metamorphosis

B) Wings

C) Jointed appendages

D) Tracheal system

Answer: Jointed appendages

Solution: Phylum Arthropoda is the largest phylum of Animalia. They have an organ-system level of organisation. They are bilaterally symmetrical, triploblastic, segmented, and coelomate animals. The body of arthropods is covered by a chitinous exoskeleton. The body consists of the head, thorax, and abdomen. They have jointed appendages (arthros-joint, poda-appendages). Respiratory organs are gills, book gills, book lungs, or tracheal system. The circulatory system is of open type. Excretion takes place through Malpighian tubules. They are mostly dioecious. Fertilisation is usually internal. They are mostly oviparous. Development may be direct or indirect.

Examples: *Apis* (Honey bee), *Bombyx* (Silkworm), *Laccifer* (Lac insect), *Anopheles.*

Insects like grasshoppers, cicadas, cockroaches, lice, etc., undergo incomplete metamorphosis.

Arachnids are eight-legged arthropods with no wings or antennae.

Large spiders (such as tarantulas) and scorpions lack a tracheal system and possess book lungs alone for respiration.

Q.9. Member of Echinodermata has a specific system, which is not found in other phylum, it is:

A) Canal system

B) Water vascular system

C) Respiratory system

D) Jointed appendages

Answer: Water vascular system

Solution: The organisms belonging to the phylum Echinodermata are exclusively marine. To date, there have been no traces of any terrestrial or freshwater Echinoderms. These animals have an endoskeleton of calcareous ossicles. They have an organ-system level of organisation. They are triploblastic and coelomate animals. The digestive system is complete with a mouth on the lower (ventral) side and anus on the upper (dorsal) side. The most distinctive feature of echinoderms is the presence of a water vascular system which helps in the locomotion, capture, and transport of food and respiration.

Examples: *Asterias* (Starfish), *Echinus* (Sea urchin), *Antedon* (Sea lily), *Cucumaria* (Sea cucumber), and *Ophiura* (Brittle star).

Q.10. True coelom appeared first during the course of evolution in:

A) Echinodermata

B) Annelida

C) Chordata

D) Protozoa

Answer: Annelida

Solution: Phylum Annelida is a very broad phylum belonging to the kingdom Animalia. The Annelids are found in aquatic as well as terrestrial environments. These are bilaterally symmetrical invertebrate organisms. Their segmented body distinguishes them from any other organism. Phylum Annelida shows evidence for first true coelomates.

The characteristics of the organisms present in the Phylum Annelida is as follows:

1. The Annelids are coelomate and triploblastic.
2. They exhibit organ system-level organisation.
3. Their body is segmented and respire through their body surface.
4. Nephridia are the excretory organs.
5. They contain haemoglobin, a well-developed circulatory and digestive system.
6. Regeneration is a very common characteristic of the Annelids.
7. Setae help them in movement.

Q.11. Which one is the distinguishing feature of all vertebrates?

A) An internal bony or cartilagenous skeleton

B) A hairy body covering

C) Presence of mammary glands

D) Open type of circulatory system

Answer: An internal bony or cartilagenous skeleton

Solution: Vertebrates comprise all species of animals within the subphylum Vertebrata. The vertebrates comprise a large group of chordates and are subdivided into seven classes (3 classes of fish, amphibians, reptiles, birds, and mammals).

All vertebrates have an internal skeleton of cartilage or bone, with vertebrae surrounding the dorsal nerve cord. A hairy body covering, the presence of mammary glands is characteristic of mammals. The vertebrates have a closed circulatory system.

Q.12. Which of the following group of animals have a constant body temperature?

A) Reptiles, aves & mammalia

B) Aves & cyclostomata

C) Pisces & amphibia

D) Aves & mammalia

Answer: Aves & mammalia

Solution: Surviving the change of temperature is a process found in many animals, insects, birds, and the phenomenon is known as thermoregulation. Some animals survive through the extreme fluctuations in temperature by undergoing hibernation, or by entering a dormant stage, they undergo adaptation according to the environment by making some physical modifications.

Birds and mammals are warm-blooded animals which means they maintain a constant body temperature. Birds, in general, have high metabolic rates and maintain a high constant body temperature.

Cold-blooded animals can be defined as animals that cannot regulate their internal body temperature with the change in the environment. For example reptiles, fishes, and amphibians are not capable of maintaining a constant body temperature.

Q.13. The character found only in birds is:

A) Toothless beak

B) Bipedal locomotion

C) Wings

D) Feathers

Answer: Feathers

Solution: The characteristic features of Aves are the presence of feathers and the power of fight. Most of them are able to fly but not all. The forelimbs of birds are modified into wings. The forelimbs contain three claw-less digits whereas the hind limbs have four digits with claws. The two hind limbs are modified for walking, swimming, or clasping the tree branches. They have no teeth and possess beaks that help in feeding. Their skin is dry without glands except for the oil gland at the base of the tail. Endoskeleton is fully ossified, and the long bones are hollow with air cavities. The digestive tract of birds has additional chambers, namely the crop and gizzard. The heart is completely four-chambered. They are homoeothermic animals. The birds have separate sexes. The fertilisation is internal, and they are oviparous and development is direct.

Q.14. Whales are included in the same taxonomic class as:

A) Sharks

B) Crocodile

C) Seahorse

D) Gorilla

Answer: Gorilla

Solution: The whale belongs to the class Mammalia. Among the four options given, gorillas also come under class Mammalia. Mammals are found in a variety of habitats including polar ice caps, deserts, mountains, forests, grasslands, and dark caves. Some of them have adapted to fly or live in water. Their main characteristic is the presence of milk-producing glands by which the young ones are nourished. They have two pairs of limbs, adapted for walking, running, climbing, burrowing, swimming, or flying. Their skin is unique in possessing hair. Their heart is four-chambered. They are homoiothermous. Sexes are separate and fertilization is internal. They are viviparous with few exceptions and development is direct.

Q.15. In vertebrates, the notochord is modified into

A) Vertebral column

B) Centrum of vertebrae

C) Body of vertebrae

D) Transverse process of vertebrae

Answer: Vertebral column

Solution: The members of subphylum vertebrata possess notochord during the embryonic period. The notochord is replaced by a cartilaginous or bony vertebral column in the adult. Besides the basic chordate characters, vertebrates have a ventral muscular heart with two, three or four chambers, kidneys for excretion and osmoregulation and paired appendages which may be fins or limbs.

Q.16. The undifferentiated layer is present in between the ectoderm and endoderm in diploblastic animals is

A) Mesoglea

B) Mesohyl

C) Mesoderm

D) Epidermis

Answer: Mesoglea

Solution: Diploblastic animals have only two embryonic germ layers (ectoderm and endoderm). Cnidarians, such as jellyfish, coral and sea anemones, are examples. The ectoderm layer generates tissue generally becoming the outside of the animal, where the endoderm layer generates tissue that lines the inside of the digestive cavity. In contrast to many other animals, diploblastic organism develops no mesoderm, which is a middle germ layer generating tissue in between the other two layers. Instead, diploblastic animals have an undifferentiated layer, mesoglea, which is present in between the ectoderm and the endoderm. A body cavity called a coelom is absent in diploblastic animals.

Q.17. Which one is correctly matched?

A) Jelly fish and Star fish - Radial symmetry

B) Hydra and shark - Bilateral symmetry

C) Tapeworm and octopus - Radial symmetry

D) *Amoeba* and Sea Urchin - Asymmetry

Answer: Jelly fish and Star fish - Radial symmetry

Solution: Animals can be classified on the basis of their symmetry:

Sponges are **asymmetrical** as any plane that passes through the central axis does not divide them into equal halves and *Amoeba* is a unicellular organism, the symmetry does not work here.

When any plane passing through the centre of the body divides the organism into two identical halves, it is called as **radial symmetry**. **Cnidarians**, C**tenophores** and **Echinoderms** have this kind of symmetry.

Animals of phyla **Aschelminthes**, Arthropods, Annelids, Hemichordates, Chordates and Molluscs have a body that can be divided into identical left and right halves in only one plane; this is called **bilateral symmetry**.

Jelly fish belong to the **phylum Cnidaria** which having body symmetry such that their body can cut in equal halves from any line of axis passing through central axis of body this type of symmetry is known as **radial symmetry** whereas, **starfish** belong to the **phylum Echinodermata** in which the adult have **radial symmetry,** but **larvae** show **bilateral symmetry**.

Q.18. Biradial symmetry and lack of cnidoblasts are the characteristics of

A) *Hydra* and *Aurelia*

B) *Aurelia* and sea *Adamsia*

C) *Ctenoplana* and *Pleurobrachia*

D) *Aurelia* and *Paramoecium*

Answer: *Ctenoplana* and *Pleurobrachia*

Solution: Ctenophora is a phylum of animals that live in marine waters in which the outer surface bears usually eight comb rows called comb plates or swimming plates. The comb plates are used for swimming. The members of Ctenophora lack stinging cnidoblasts and bilateral symmetry. Its examples include *Ctenoplana* and *Pleurobrachia*.

Q.19. The multicellular animals having this type of body organisation can lead a more efficient way of life:

A) Acellular level

B) Cellular level

C) Tissue level

D) Organ system level

Answer: Organ system level

Solution: In higher animals, several organs are associated to form a distinct system concerned with a specific function like digestion, respiration, circulation, excretion and reproduction. This organ system level organization is the highest level of body organization. This is first seen in a group of marine worms known as phylum Aschelminthes. Annelids and all the other higher phyla show this kind of organization.

Q.20. Lizards are included in which class?

A) Pisces

B) Amphibia

C) Reptilia

D) Mammalia

Answer: Reptilia

Solution: Lizards are tetrapods that crawl on walls and have rough, cornified skin that possesses no glands. They are oviparous. Lizards can tolerate wide ranges of temperature. They have been grouped under the class Reptilia as they exhibit all the typical reptilian characteristics.

Q.21. Notochord is present in

A) Parazoa

B) Chordata

C) Annelida

D) Mollusca

Answer: Chordata

Solution: Chordates are the highly evolved animals of the kingdom Animalia. The characteristic features of this Phylum are:

- Presence of a post-anal tail.
- Notochord.
- Ventral Heart.
- Dorsal, hollow nerve cord.
- Pharyngeal gill slits.

All the other animal groups are invertebrates (non-chordates) and lack all the above features.

Q.22. How many animals from the following are warm-blooded with 4-chambered heart and oviparous condition?

[*Corvus, Struthio, Macropus, Ornithorhynchus, Balaenoptera, Pteropus, Delphinus, Psittacula, Chelone, Calotes, Crocodilus*]

A) Six

B) Five

C) Four

D) Seven

Answer: Four

Solution: Aves or birds are warm-blooded animals with 4-chambered heart and oviparous conditions. These include *Corvus* (Crow), *Struthio* (Ostrich), *Psittacula* (Parrot). Crocodile is a reptile with a four-chambered heart.

Q.23. Statement 1 - In vertebrates, the notochord is replaced by vertebral column but in protochordates the notochord remains as it is.

Statement 2 - All vertebrates are chordates but all chordates are not vertebrates

A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

B) Both statement 1 and 2 are correct but statement 2 is not the correct explanation of statement 1

C) Statement 1 is correct and statement 2is incorrect

D) Both statements 1 and 2 are incorrect

Answer: Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

Solution: Vertebrata or Craniata subphylum belongs to Phylum Chordata. They have some basic features, like:

I. They have notochord converted into the Vertebral column.

II. They possess an axial endoskeleton.

III. The brain cage is present, called Cranium.

The notochord is also present in primitive chordata members like Protochordata (Urochordata and Cephalochordata), however, they have not evolved the vertebral column. Thus, they are chordates and not vertebrates.

Q.24. Which of the following characteristics are true for Phylum Platyhelminthes?
I. Some absorbs nutrients from the host directly through their body surface.
II. Digestive system (if any) incomplete, branched and without anus.
III. Flame cells/solenocytes/protonephridia help in excretion and osmoregulation.
IV. Hooks and suckers are present in parasitic forms.
V. Hermaphrodites (usually).
VI. Fertilization internal.
VII.Indirect development (usually) through many larval stages.

A) I, II, III, V, VI

B) II, III, IV, V, VI

C) All except I

D) All of these

Answer: All of these

Solution: Phylum Platyhelminthes word has originated from *Platy* means flat, and *Helminth* means Worm. The phylum has the following features:

1. They are mostly parasitic, while some are free-living, terrestrial or aquatic.

2. Their body is Dorso-ventrally flattened, without any external or internal segments.

3. They are the first Triploblastic animals, Acoelomate, with bilateral symmetry and organ-system-level organisation.

4. The body has a soft and ciliated covering. Some rod-shaped bodies or Rhabdites are present in some forms on their body epidermis.

5. The space between the alimentary canal and the body wall is filled with a special type of connective tissue called Parenchyma.

6. The Digestive system is incomplete, as there is no anus. In parasitic forms, the digestive tract is altogether absent.

7. Circulatory, Skeletal, and Respiratory systems are absent in most of the forms. The gaseous exchange takes place via diffusion through the body wall. The parenchyma helps in food transport.

8. The Flame cells are typical excretory organs, which is also called Solenocytes or Protonephridia. They are also for osmoregulation. Organisms are ammonotelic.

9. The Nervous system is typically a ladder-like structure, with two longitudinal nerve cords and transverse commissures. The brain is not developed, but the nerve ring is present.

10. Most organisms are generally hermaphrodite with well developed reproductive organs. Fertilisation is always internal. Some forms (Dugasia) show a high level of regeneration potentials.

11. There are one or many at a time, more than one larval stage. Thus, the life cycle is complex and indirect. In the liver, fluke, Miracidium, Sporocyte, Redia, Cercaria, and Metacercaria larvae are present.

Q.25. Assertion - *Lumbricus* and *Nereis* both belong to Annelida.
Reason - They have nephridia.

A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B) Both Assertion and Reason are true but Reason is NOT the correct explanation of Assertion.

C) Assertion is true but Reason is false.

D) Both Assertion and Reason are false

Answer: Both Assertion and Reason are true but Reason is NOT the correct explanation of Assertion.

Solution: *Lumbricus* and *Nereis are members of* Phylum Annelida, *Nereis* belongs to Polychaeta, and *Lumbricus* belongs to Oligochaeta.
Lumbricus is commonly known as a European earthworm.
In Phylum Annelida, the excretory structures are Nephridia, so both statements are correct. However, the presence of nephridia alone doesn't explain the assertion.

Practice more on Animal Kingdom