

CBSE Class 11 Biology
Important Questions
Chapter 4
Animal Kingdom

1 Marks Questions

1. What is mesogloea ? Where is it found.

Ans. Undifferentiated layer present between ectoderm and endoderm. It is found in Coelenterates.

2. When is the development of an organ called as Indirect?

Ans. Have a larval stage morphologically distinct from adult.

3. Why are corals important?

Ans. Have skeleton composed of calcium carbonate which gets deposited and can lead to formation of land forms. E.&. Lakshadweep (a coral island).

4. What is the difference between class Amphibian and class Reptilia in respect of their skin ?

Ans.

Ambhibia	Reptilia
1.skin is mois nad slimy	1.skin is sry and covered by scales of scute plates
2.lay eggs inside the water	2.lay eggs outside the water.
3.Their larvae have gills.	3.no larva is produced

5. Which phylum con of organism with cellular level of organisation ?

Ans. Class Amphibian: Have moist skin without scales.

Class Reptilian: Have dry committed skin with scales.

6. Name the arthropod which is a (i) Living fossil, (ii) Gregarious pest.

Ans. (i) Limulus (King crab), (ii) Locustan (Locust).

7. Which organ helps in excretion in (i) Arthropods, (ii) Hemichordates ?

Ans. (i) Malpighian tubules, (ii) Proboscis gland.

8. Name an example of egg-laying mammals.

Ans. Duck-bill platyhelminthes

9. What is polymorphism.

Ans. The phenomena when an organism has different kinds of zooids for different functions is called polymorphism.

10. Which animal is popularly called ploughman of nature & why ?

Ans. Earthworms are popularly known as Nature's ploughman because they bring subsoil over the surface & create fine burrows for aeration.

11. What are the organs of excretion in annelids & insects.

Ans. Annelida – nephridia & insect – Malpighian tubule.

12. Name a free living & a parasitic Platyhelminths .

Ans. Freely living – planaria & parasitic – Taenia.

13. Name two adaptations for an aerial mode of life.

Ans.(i)Forlimbs modified into wings

(ii)Uricotelic excretion & pneumatic bones.

14.Name the organs of defense in paramecium.

Ans. Trichocysts are organ of defense in paramaecium

15.Name the second largest animal phylum.

Ans. Molluscs

16.What are acoelomate animals ?

Ans. The animals which do not have a coelom or body cavity are called acoelomate eg. porifera, coelenterates, flatworms.

17.Name the larva found in mollusca & annelid.

Ans. Trochophore larvae

18.Name two viviparous fishes.

Ans. Pristis & squalodon

19.What are flame cells ?

Ans. Flame cells are excretory organs of platyhelminthes which possesses flickering cilia or flagella for driving the absorbed excretory product into system of ducts

20.Name a vertebrate in which jaws are absent.

Ans. Petromyzon

21.Assign the phylum to which following animals belongs – pheretima & sponge.

Ans. Pheretima – Annelida & sponge – porifera.

22.What is metamerism ?

Ans. In some bilateria, the body consists of many segments & shows repetition of parts. This type of segmentation is called metamerism.

CBSE Class 12 Biology
Important Questions
Chapter 4
Animal Kingdom

2 Marks Questions

1. Distinguish between poikilothermous and homoiothermous organisms.

Ans. Poikilothermous (cold blooded) Lack ability to regulate their body temperature.

Homoiothermous (warm blooded) Can regulate body temperature.

2. Define mutagenesis with a suitable example.

Ans. Refer Point, to Remember.

3. List any four identifying features of arthropoda & give examples.

Ans. (i) Animals having jointed appendages

(ii) Triploblastic, coelomate, & bilaterally symmetrical

(iii) Body is covered by chitinous cuticle & segments are not separated by septa

(iv) Arthropods are unisexual animals

(v) eg. crab, Apis, spider, Anopheles

4. Distinguish between diploblastic & triploblastic animals

Ans.

Diploblastic animals	Triploblastic animals
Diploblastic animals have two germ layers outer ectoderm & inner	Triploblastic animals have three germ layer outer ectoderm middle mesoderm & inner

endoderm in their embryo gastrula stage Eg. Hydra, Obelia, Porpcta	endoderm in their embryo gastrula Eg. all animals except porefera & coelentrata
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5.What is protochordates? How is it classified.

Ans. Protochordates are the primitive non vertebrate ehordates. There are three subphyla

(a) Hemichordata eg. Belanoglossus.

(b) Urochordata eg. salpa & Herdmania.

(c) Cephalochordate eg. Amphioxus.

6.Mention the unique features of nematodes.

Ans. (i) Syncytical without mesodermal lining

(ii) Intestine non – muscular but formed endoderm alone

(iii) Body wall musculature & made of special types of muscles.

(iv) Sexual dimorphism is quite clear.

7.Point out differences between dog fish & cat fish.

Ans.

Dog fish	Cat fish
i) It belongs to phylum – chordate Class – Pisces Subclass - Chondrichthyes	It belongs to phylum – chordate Class – Pisces Subclass – Osteichthyes
ii) It is a cartilaginous fish	It is a bony fish
iii) Body streamlined & divisible into head, trunk & tail	Its endoskeleton is made up of bones.

8.Outline the role of coelom in animals.

Ans. Coelom is the space between body wall & alimentary canal of organisms it is lined by mesoderm. Visceral organs lie in the coelom. Flatworm does not have coelom. Hence they are called acoelamata. Pseudocoelom is found in the round worm. Annelids are coelomate animals.

9.Mention the unique features of phylum mollusca.

- Ans. (i)**Body soft as well as unsegmented
- (ii)**The body is covered by calcareous shell & mantle.
- (iii)**Body is divided into – head, visceral mass &foot.
- (iv)**Buccal mass possesses radula.

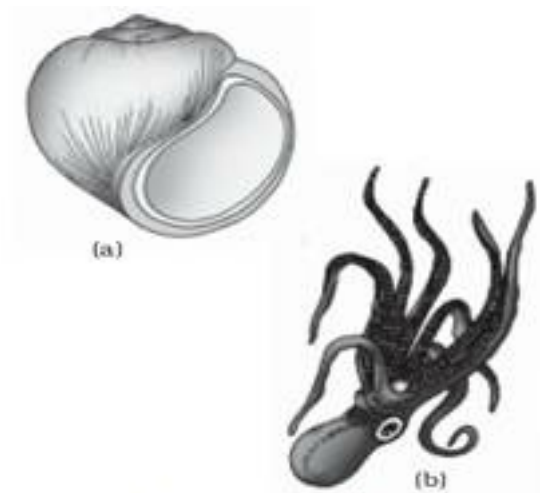


Figure 4.13 Examples of Mollusca :
(a) *Pila* (b) *Octopus*

10.Distinguish between insect & arachnida.

Ans.

Insect	Arachnida
i) Body is divided into three parts head, thorax & abdomen	i) Body is divided into two parts – cephalthorax & abdomen
ii). Wings are found	ii) wings are lacking

iii).Appendages on head are antennae, mandibles & maxiliae	iii) Appendages on head are pair of chellcerae & a pair of pedipalpa.
iv) Walking legs are three pairs	iv) walking legs are four pairs

11.Why are echinoderms considered closer to chordates than any other phylum ?

Ans. Echinoderms are considered closer to chordates because like chordates, they are deuterostomes where the anal region develops earlier than mouth region. Their larve are also closer to protochordata.

12.Distinguish between bony fish & cartilaginous fish.

Ans.

Bony fishes	Cartilaginous fishes
i) They are called osteichthyes	i) They are called chondrichthyes.
ii) Their endoskeleton is bony.	ii) Their endoskeleton is cartilaginous.
iii) They are found in sea & fresh water both.	iii) All are marine forms.
iv) They have swim bladder.	iv) They have five pairs of gills
v) Gills are covered by opercula.	v) operaculum absent
vi) Eg. Salmon, catla Rohu.	v) Rays, scoliodon, electric ray.

13.Give reason why a snail & an octopus are classified under the same phylum?

Ans. Snails & octopus are classified under the phylum mollusca because they have following three characters:-

(i) Presence of mantle in both

(ii) Presence of foot in both

(iii) Presence of shell in both

14. List three basic chordate characters.

Ans. (i) Notochord :- a dorsal solid notochord is present throughout life or in larval stage.

(ii) Nerve cord :- a dorsal hollow nerve cord is present

(iii) Pharyngeal gill slits :- a perforated pharynx is present in young condition or throughout life.

15. Give any four characteristics of hemichordate.

Ans. (i) These are worm like marine animals that have organ- system level of organization.

(ii) They are bilaterally symmetrical, triploblastic & eucoelomate.

(iii) Body is cylindrical & is divided into anterior proboscis, collar & long trunk.

(iv) Respiration occurs through gills.

16. Distinguish between centipede & millipede.

Ans.

centipede	millipede
i) Dorsiventrally flattened body	i) cylindrical body
ii) There are two parts of body – head & trunk	ii) There are three parts of body – head, thorax & abdomen.
iii) Maxillae are 2 pairs	iii) Maxillae are only one pair.

17. Give reason why arthropoda constitute the largest group of animal kingdom

Ans. Arthropods constitutes the largest group of animal kingdom:-

(i) Have organ level of organization.

(ii) bilaterally symmetrical, segmented, triploblastic, encoelomate animals.

(iii) Body enclosed by chitinous cuticle.

(iv) They have jointed appendages.

(v) Trachea or book gills for respiration.

18. Differentiate between male & female ascaris.

Ans.

Male Ascaris	Female Ascaris
i) 15-30 cm long	i) 20-40 cm long
ii) Posterior end curved.	ii) Posterior end straight
iii) Vulva absent	iii) Vulva present
iv) There are 2 pineal spicules from cloacal pore.	iv) No pineal spicules.
v) Pre- anal or post- anal papillae present	v) There are no such structures.

19. List three adaptations that help the birds (Aves) in flying.

Ans. (i) The avian flight muscles are used for fast short fly.

(ii) Flight muscles contain white fibres which are poorer in mitochondria & free of myoglobin.

(iii) The long bones are hollow & connected by air passages.

20. List the characteristic features of class Mammalian.

Ans. Refer Point, to Remember.

CBSE Class 12 Biology
Important Questions
Chapter 4
Animal Kingdom

3 Marks Questions

1. What are the features of class Aves which help them fly ?

Ans. Wings, bones long and hollow with air cavities, air sacs connected to lungs to supplement respiration.

2. “All vertebrates are chordates but all chordates are not vertebrates” justify the statement.

Ans. All vertebrates are chordates because they possess three basic chordate features as:-

(i) All chordates possess a notochord

(ii) All chordates have a dorsal hollow nerve cord.

(iii) All chordates have pharyngeal gill cleft in some stages of life cycle

All chordates are not vertebrates. Vertebrates have vertebral column but protochordates & agnatha have notochord that is not replaced by vertebral column.

3. “Mammals are the most successful & dominant animals today” Give evidence.

Ans. Mammals are the most successful & dominant animals today. They thrive very well in most environment of world & The unique characteristics of mammals are:-

(i) Body covered with hair

(ii) Presence of sebaceous & sweat glands in skin

(iii) Presence of mammary glands in females

- (iv) Presence of a pair of external ears & three ear ossicles
- (v) Heart is four chambered
- (vi) RBCs are biconcave & enucleated
- (vii) Corpus callosum unites two cerebral hemisphere
- (viii) Testis are extra abdominal
- (ix) Mostly viviparous & embryo attached to uterine wall by placenta.

4. Enlist the main characteristics & examples of phylum porifera.

- Ans. (i)** They are commonly called as sponges
- (ii)** They are generally marine, diploblastic, bilaterally symmetrical
- (iii)** They have water transport mechanism
- (iv)** They are very primitive multi-cellular animals with cellular level of organization.
- (v)** Water can enter by pores Ostia in body wall directly or through canal into spongocoel. From it goes out by means of osculum. It is called canal system
- (vi)** The digestion is intracellular
- (vii)** Body is supported by a skeleton which consists of spicules
- (viii)** Sexes are not separate
- (ix)** They reproduce asexually by fragmentation or sexually by formation of gametes
- (x)** Fertilization is internal example- Euplectella, Sycon, Spongilla, Euspongia

5. What are the basis of classification of animalia ?

Ans. Animals are classified on the basis of following characteristics:-

- (i) Notochord:-** It is a rod – like structure found on in the chordates. Non – chordates do not

have it

(ii)Symmetry:- It is the plan of arrangement of body parts.” There are three types – asymmetric, radially symmetrical & bilaterally symmetrical.

(iii)Organisation:- Animals have cellular grade of organization. Their bodies are made up of cell others have tissues organs & organ system.

(iv)Embryonic layers:- Ectoderm, mesoderm& endoderm give rise to different organs in the body. These are called germinal layers. Some animals are diploblastic eg. sponges but others are triploblastic having three germinal layers.

6.Give important characters of phylum Nematelminthes.

Ans. (i)They are commonly known as roundworms or nematodes & are covered by cuticle.

(ii)Body is bilaterally Symmetrical

(iii)Animals with elongated cylindrical & spindle shaped body with pointed ends

(iv)The body cavity is a false coelom called pseudocoelom

(v)The alimentary canal lacks a muscle layer.

(vi)Respiratory organ & blood vascular system are absent

(vii)Example – Ascaris, Ancylostoma, Rhabditis.

7.Members of which phylum are known as “segmented worm” Write about their body symmetry, mode of excretion & respiration.

Ans. The members of the phylum Annelida are known as “the segmented worms” Their body is metamereally segmented eg. Neiris, pheretima & Hirudinaria.

(i)Body Symmetry:- Segmented worms have typical metameric segmentation. Their body consists of segments called somites or metamere & ring like grooves known as annuli

(ii)Excretion:- the excretory unit of these invertebrates are coiled tubules called nephridia.

(iii)Respiration:- Respiration occurs by gills or by skin. The skin is richly supplied with blood vessels. It is permeable. The exchanges of gases take place there.

8.Differentiate between Annelida & Arthropoda.

Ans.

Annelida	Arthropoda
i) Elongated & metamerically segmented body	i) Body segmented & differentiated into cephalic, thoracic & abdominal region
ii) Appendages borne on body segments	ii) Appendages may be segmented or jointed.
iii) Setae present	iii) Setae absent
iv) Body wall derm muscular	iv) Body wall is not derm muscular
v) Body cavity is coelom	v) Body canal is haemocoel
vi) Respiratory pigment is haemoglobin	vi) Respiratory pigment is absent
vii) Blood is red	vii) Blood is colourless or bluish
viii) Blood vascular system is close type	viii) Blood vascular system is open type
ix) Cilia & nephridia present	ix) Cilia & nephridia absent
x) No exoskeleton	x) Exoskeleton is chitinous

9.What are basic plans of body design in animals?

Ans. Animals can be divided into three basic plans:

- (i)Cell Aggregate plan:-** It is found in simple animals eg. sponges in which clusters of cells with rudimentary division of labour is found in them.
- (ii)Blind sac plans:-** It is found in coelenterates & flat worms. They have a digestive cavity with only one opening to the outside. Through this opening the mouth food is ingested & undigested waste is thrown out. The cells are more specialized & have division of labour.
- (iii)Tube- within a tube plan:-** It is found in more complex forms In this plan body cavity forms one tube within which is situated another tube alimentary canal, opening on one side by mouth & other side by anus.

10. Mention the important characters of phylum echinodermata & give examples.

Ans. (i) The word Echinodermate means “ spiny skin” which is optly used for group of animals represented by such common forms e. starfish, Sea urchin.

(ii) The skin forms a hard spiny protective skeletal covering

(iii) They are sluggish marine forms.

(iv) Forms usually show a pentamerous radial symmetry

(v) The radial symmetry is superficial & body in fact can be divided only in two halves.

(vi) They have a coelom & water vascular system.

(vii) Locomotion takes place by numerous hollow tube feet

(viii) Excretion by diffusion through body

(ix) Fertilization in open sea.

(x) Development includes free swimming diploneural larva.

Eg. Asterias, seararchin, sea cucumber.

11. Give three important distinguishing characters of arthropodo, reptiles & mammals.

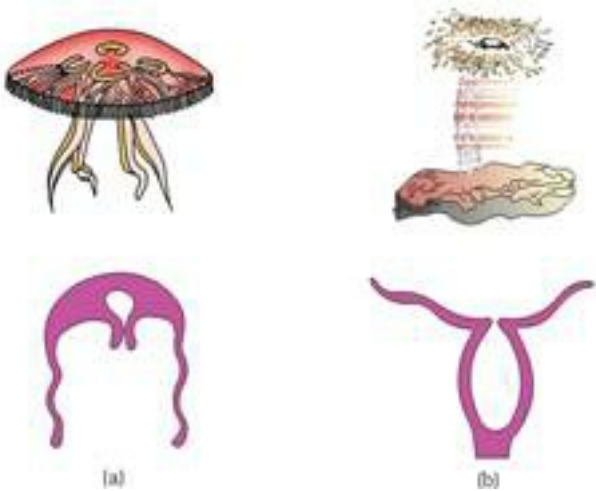
Ans. (i) Arthropods:- jointed appendages, segmented body divisible into head, thorax & abdomen, presence of hard non- living exoskeleton of chitin, eyes compound eg. insects, centipede etc.

(ii) Reptiles:- cold blooded, Body covered by scales, Two pairs of limbs, lay eggs eg. lizard, snake etc.

(iii) Mammals:- warm blooded, body covered by hairs, an external ear is present, give birth to young ones, They have small pointed teeth & long snout insectivores are primitive mammals.

12. Mention the important characteristics of coelentrata & give examples.

- Ans. (i)** They are marine animals which may be siltary or colonial
- (ii)** The body is two layered or diploblastic
- (iii)** The body possesses a radial symmetry
- (iv)** They are acoelomate animals i.e. true coelom. They exhibit blind sac body plan.
- (v)** The body encloses a large central cavity known as coelenterons which has a single opening to the exterior. Coelenterons is called gastro vascular cavity.



- (vi)** They commonly show polymorphism. Two kinds of individuals present- hybroid & medusoid
- (vii)** They possess tentacles which are usually thread- like out growths.
- (viii)** Stinging cells or nematoeytes are present. Eg. Obelia. Aurelia.

13.Differentiate between flightless & flying birds.

Ans.

	Flightless Birds	Flying Birds
i) Classification	Belong to suborder Retitae	Belong to carinatae
ii) Wings	Wings vestigial	Wings are well developed
iii) Feathers	No interlocking mechanism	Possess interlocking mechanism

iv) Sternum	Sternum raft like	Sternum boat shaped
v) Ribs	No uncinat process	Ribs uncinat process
vi) Tail vertebrate	Pygostyle may be small or absent.	Pygostyle found
vii) Flying	Cannot fly	Can fly
viii) Distribution	Restricted in distribution	Found all over the world
ix) Example	Rheo, cassowary emu ostrich.	House sparrow cuckoo hornbill quail peacock fowl parrot crow.

CBSE Class 12 Biology
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Chapter 4
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5 Marks Questions

1. How are non chordates different from chordates. Write the major phyla of non-chordate & give examples.

Ans.

Non - Chordates	Chordates
i) Notochord is present	i) Notochord is absent
ii) Central Nervous system dorsal, hollow & single.	ii) Central nervous system is ventral solid & double
iii) Pharynx is perforated by slits	iii) Gill slits absent
iv) Heart Ventral	iv) Heart dorsal
v) A post anal metamerically segmented tail present	v) Terminal part unsegmented

Major phyla of non – chordates are:-

(i) Phylum - porifera:- adults sessile having cellular grade of organization & body is porous eg. Spongilla.

(ii) Phylum – coelentrata:- Radially symmetrical & tentacles present in polyps & medusa eg. Aurelia.

(iii) Phylum – Platyhelminthes:- Dorsoventrally flattened & organ of excretion is protonephridia eg. Taenia.

(iv) Phylum - Nematoda:- Parasitic forms with elongated round body eg. Enterobius.

(v)Phylum - Annelida:- Body metamerically segmented eg. Hiduneria.

(vi)Phylum - Arthropoda:- Exoskeleton of chitin, Jointed appendages eg. Bombax mori

(vii)Phylum – Mollusc:- soft bodies shelled animals having foot, mantle & visceral mass eg. chiton

(viii)Phylum – Echinodermata:- Exclusively marine having spiny skin & water vascular system with tube feet eg. ophiothrix.

2.Enlist the main features of Aschelminthes & give examples.

Ans. (i)They are called Round worm as they appear circular in C.S.

(ii)Free living, aquatic, terrestrial or parasitic

(iii)Organization of body is organ level

(iv)Bilaterally symmetrical animals

(v)They are triploblastic & pseudocoelomate

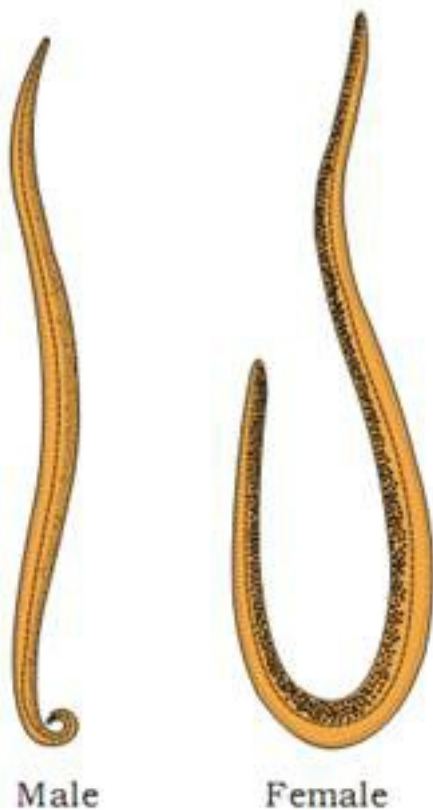
(vi)Alimentation complete with muscular or pharynx

(vii)Sexes are Separate

(viii)Body is covered by cuticle

(ix)Fertilization is internal

(x)Examples are filarial worm (wuchereria), Ascaris, Pinworm (Enterobuis) Hookworm (Ancylostoma)



Male

Female

Figure 4.10 Aschelminthes
– Roundworm

3. Enlist the main salient features of phylum ctenophora.

Ans. (i) Ctenophores are marine animals with transparent & flat or oval body shape.

(ii) Polyp phase is absent in life cycle.

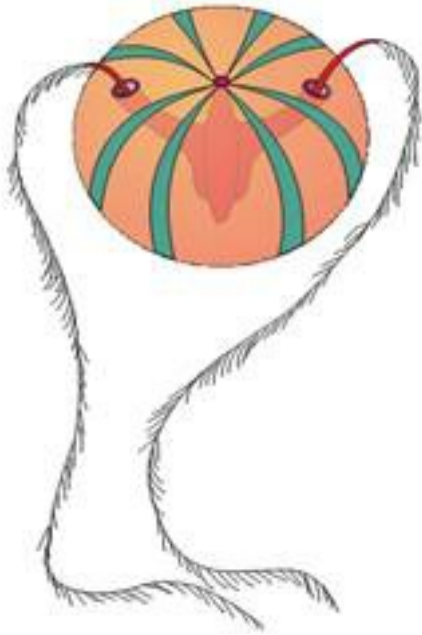
(iii) These are bilaterally symmetrical & devoid of cnidoblast cells.

(iv) When the tentacles are present they are two in number & contain colloblast cells.

(v) They move by cilia which join together to form comb plates, they are eight median comb plates.

(vi) Their gastrovascular cavity is branched & open to the exterior by stomodaeum.

Example of Ctenophora (Pleurobrachia)



(vii) They are diploblastic animals but the mesoglea is different from that of cnidaria.

(viii) The presence of special sense organs at the opposite end of the mouth is the characteristic of this phylum.

(ix) They reproduce only by sexual means

(x) They do not have larval phase in their life cycle

(xi) Eg. ctenophore, ctenoplana, Beroe, & Hormiphora.