

Classification :

Classification is scientific method in which organisms are arranged in different or same taxa according to similarity and dissimilarity.

- Animal classification is based on their shape, form, size, level of organization, symmetry, coelom, segmentation, etc.

- **Levels of organization :**

Members of animal kingdom exhibit different levels of organization. Protozoans are unicellular animals. Sponges are multicellular but cells are functions independently. Coelenterata have tissue level of organization. Platyhelminthes have organ level of organization. Organ systems are seen in Annelida, Arthropods, Molluscus, Echinoderms and Chordates.

- Organ systems of all phyla exhibit different structure.

(1) Digestive tract :

- Digestive tract with only one opening is called incomplete digestive tract. e.g., Platyhelminthes.
- Digestive tract has two opening i.e., anterior mouth and posterior anus is called complete digestive tract. e.g. Aschelminthes to chordate.

(2) Circulatory system : Circulatory system is of two types :

- (i) Open type of circulatory system example : Arthropoda and Mollusca except - cephalopoda.
- (ii) Closed type of circulatory system example : Annelida, cephalopoda and all vertebrata.

(1) The classification of Animal is based on which characters ?

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|--|----------------------------------|
| (A) Level of organization and symmetry | (B) Embryonic layers and coelom. |
| (C) Notochord and segmentation | (D) A, B, C All |

(2) The plyum of which animals are structurally and functionally unicellular ?

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|------------------|--------------|--------------|--------------|
| (A) Coelenterata | (B) Protozoa | (C) Annelida | (D) Porifera |
|------------------|--------------|--------------|--------------|

(3) Which animal phylum are multicellular but possesses cellular level of organization ?

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|---------------------|----------------|--------------|--------------|
| (A) Platyhelminthes | (B) Arthropoda | (C) Porifera | (D) Annelida |
|---------------------|----------------|--------------|--------------|

(4) Which animal phylum have organ level of organization ?

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|--------------|----------------|---------------------|--------------|
| (A) Annelida | (B) Arthropoda | (C) Platyhelminthes | (D) Chordata |
|--------------|----------------|---------------------|--------------|

(5) Which animal phylum possesses organ system level of organization ?

- | | |
|--------------------------------|-----------------------------|
| (A) Annelida and Echinodermata | (B) Arthropoda and Mollusca |
| (C) Chordata | (D) A, B, C All |

- (6) Which animal phylum possesses incomplete digestive tract ?
 (A) Aschelminthes (B) Platyhelminthes (C) Chordata (D) Arthropoda
- (7) Which animal phylum possesses complete digestive tract ?
 (A) Aschelminthes (B) Arthropoda (C) Annelida (D) A, B, C All
- (8) Which animal phylum possesses open circulatory system ?
 (A) Annelida (B) Amphibia (C) Arthropoda (D) Reptilia
- (9) Which Animal phylum possesses close circulatory system ?
 (A) Reptilia (B) Annelida (C) Amphibia (D) A, B, C All
- (10) In which Animal blood pressure is high and regular ?
 (A) Earthworm (B) Centipede (C) Cockroach (D) Peripatus

Answers : (1-D), (2-B), (3-C), (4-C), (5-D), (6-B), (7-D), (8-C), (9-D), (10-A)

• **Symmetry :**

- According to body organization animal exhibit three types of symmetry.
- Asymmetry example - sponges
- Bilateral symmetry example - Annelida, Arthropoda
- Radial symmetry example - Coelenterata and Echinodermata

- (11) If the body of an animals divided into two equal left and right part then it is known as
 (A) Asymmetry (B) Bilateral symmetry (C) Radial symmetry (D) A and C
- (12) If the body of an animals is divided radially into more than one plane then it is known as
 (A) Bilateral symmetry (B) Asymmetry (C) Radial symmetry (D) A and B
- (13) When plane is passing through the central axis does not divide body of animal into equal halves is known as...
 (A) Radial symmetry (B) Bilateral symmetry (C) Axial symmetry (D) Asymmetry

Answers : (11-B), (12-C), (13-D)

• **Organization of germinal layers :**

- On the basis of germinal layer animals are two types : (1) Diploblastic : example : Coelenterata (2) Triploblastic : example : Platyhelminthes to chordate

- (14) Which phylum of animal possesses diploblastic organization ?
 (A) Annelida (B) Coelenterata (C) Arthropoda (D) Platyhelminthes
- (15) In which triploblastic organization is observed for the 1st time ?
 (A) Platyhelminthes (B) Annelida (C) Arthropoda (D) Chordata

(16) On the basis of embryonic layer animals are classified into how many groups ?

- (A) One (B) Two (C) Three (D) Four

Answers : (14-B), (15-A), (16-B)

• **Coelom :**

- Coelom is a cavity located between digestive tract wall and body wall. This cavity is lined by mesoderm. Animal having coelom are called coelomates. e.g., Annelida to chordate.
- In the animal of phylum aschelminthes mesoderm is present as scattered pouches is called pseudocoelom and animal called pseudocoelomate.
- Animal do not possess coelom known as acoelomate. Example : Platyhelminthes

Segmentation :

- If animal body is divided into equal internal and external segments it is called metameric segmentation. e.g., Annelida, Arthropoda.

Notochord :

- Notochord is mesodermal in origin, dorsally situated and rod like organ located from head to tail.
- If Notochord is present animals are called chordates. e.g., Pisces to Mammal.
- If notochord is absent, animals are called non-chordates. e.g., Protozoa to Echinodermata.

(17) Which one is originated from mesoderm ?

- (A) Coelom (B) Notochord (C) Body cavity (D) A, B, C All

(18) Which phylum respectively included in acoelomate, pseudocoelomate and coelomate ?

- (A) Annelida, Aschelminthes, Platyhelminthes (B) Platyhelminthes, Aschelminthes, Annelida
(C) Arthropoda, Mollusca, Aschelminthes (D) Platyhelminthes, Annelida, Aschelminthes

(19) Which animal phylum possesses metameric segmentation ?

- (A) Annelida (B) Arthropoda (C) Echinodermata (D) A and B

(20) Which animal phylum is included in Acoelomate ?

- (A) Protozoa (B) Platyhelminthes (C) Echinodermata (D) A, B, C All

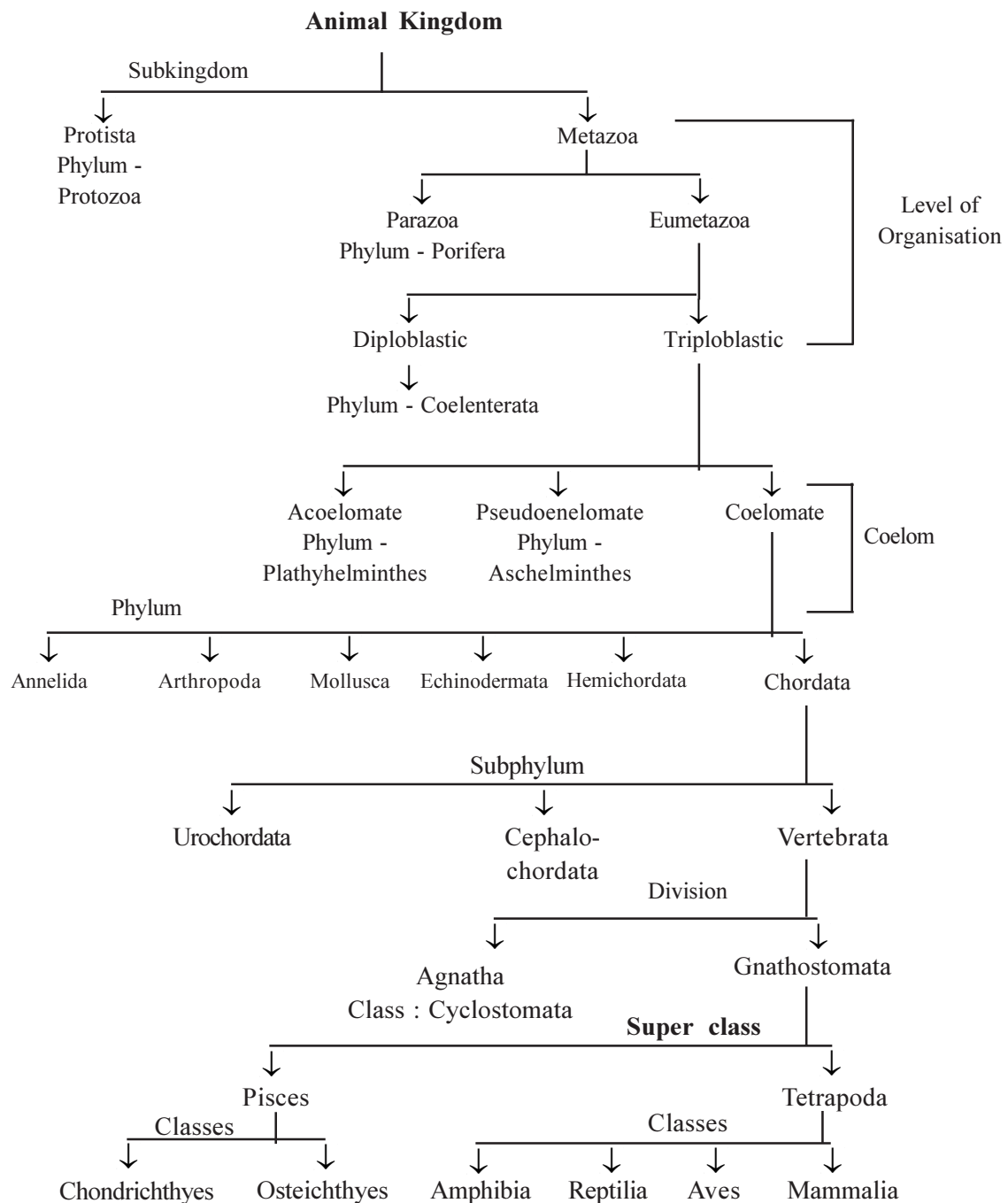
(21) Which animal phylum is included in coelomate ?

- (A) Pisces (B) Amphibia (C) Mammalia (D) A, B, C All

(22) In which phylum animal, mesoderm is present as scattered pouches ?

- (A) Coelomate (B) Pseudocoelomate (C) Acoelomate (D) Chordate

Answers : (17-D), (18-B), (19-D), (20-D), (21-D), (22-B)



• **Phylum : Protozoa :**

- Protozoa is the first phylum of animal kingdom.
- Protozoan animals are microscopic, unicellular, with one or more nuclei. Animal possesses various types of symmetry.
- Nutrition is generally holozoic, halophytic and some animals are parasitic.
- Locomotory organelles are pseudopodia, cilia or flagella.
- Animal of this phylum reproduce asexually or sexually.
- Example : Amoeba, Euglena, Opalina, Plasmodium

(23) The first phylum of animal kingdom is

(A) Mammalia

(B) Protozoa

(C) Arthropoda

(D) Annelida

- (24) Which animal possesses one or more nuclei ?
 (A) Amoeba (B) Euglena (C) Opalina (D) A, B, C All
- (25) In the phylum protozoa asexual reproduction occurs by which methods ?
 (A) Binary fission (B) Multiple fission (C) Budding (D) A, B, C All
- (26) Which locomotory organelles occur in protozoan ?
 (A) Pseudopodia (B) Cilia (C) Flagella (D) A, B, C All
- (27) Which of following animal reproduce sexually by conjugation ?
 (A) Opalina (B) Euglena (C) Plasmodium (D) A, B, C All
- (28) Which of following phylum possess all types of symmetry ?
 (A) Protozoa (B) Annelida (C) Arthropoda (D) Platyhelminthes

Answers : (23-B), (24-D), (25-D), (26-D), (27-(D)), (28-A)

• **Phylum : Porifera :**

- Multicellular and sessile animals possess body pores and lives solitary or colonial life.
- All animals are aquatic seen in marine water and some are seen in fresh water.
- The body of animal is asymmetrical or radial symmetrical structure. It possess many ostia, canals and chambers called spongocoel which open in osculum.
- Choanocytes line the spongocoel, is it's uniqueness.
- All sponges are hermaphrodite, they reproduce asexually, sexually and show power of regeneration.
- The development is indirect and during this amphiblastula or parenchymula larva are seen.
- Example : Lucosolenia, Hyalonema, Spongilla.

- (29) Which of animal phylum body possess ostia, canals, chambers and osculum ?
 (A) Protozoa (B) Porifera (C) Aschelminthes (D) Platyhelminthes
- (30) The endoskeleton of porifera is made up of which substance ?
 (A) Spongin Fibre (B) Calcium Carbonate
 (C) Different kinds of spicules (D) A and C
- (31) Which type of fertilization occur in Hyalonema ?
 (A) External fertilization (B) Internal fertilization (C) A and B (D) None of these
- (32) Spongocoel is lined by which structure ?
 (A) Nematocytes (B) Tentacles (C) Choanocytes (D) Hypostome
- (33) Which animals include in phylum porifera ?
 (A) Lucosolenia (B) Hyalonema (C) Spongilla (D) A, B, C All

Answers : (29-B), (30-D), (31-B), (32-C), (33-D)

• **Phylum - Coelenterata :**

- Coelenterates are diploblastic, radially or bilaterally symmetrical possess tissue level of organization.
- All animals are aquatic. Animals are sedentary or free swimming, solitary or colonial.
- They have central gastro vascular cavity with single opening hypostome which surrounded by tentacles. Which possess nematocytes. Tentacles helps to capture food as well as for offence and defence.
- Coelenterates occur in two forms polyps and medusae. Some species show polymorphism.
- They reproduce asexually by budding and fission while sexually by ovum and sperm. Development is indirect and planula larva occurs. Example : Hydra, sea anemone, Jelly fish, coral.

- (34) Which is the diploblastic animal phylum ?
 (A) Annelida (B) Coelenterata (C) Arthropoda (D) Mollusca
- (35) Which type of body organization possess by phylum coelenterata ?
 (A) Cellular level (B) Tissue level (C) Organ level (D) Organ system level
- (36) The tentacles are related with which functions ?
 (A) To capture food (B) For offence (C) For defence (D) A, B, C All
- (37) Which type of forms occur in coelenterate respectively for asexual and sexual reproduction ?
 (A) Polyps, Medusae (B) Medusae, polyps
 (C) Planula, Parenchymula (D) Nematocyte, tentacles
- (38) The jelly fish possess which type of body organization ?
 (A) Polyps (B) Medusae (C) Polymorphism (D) Colonial

Answers : (34-B), (35-B), (36-D), (37-A), (38-B)

• **Phylum - Platyhelminthes**

- Platyhelminthes are first triploblastic, bilaterally symmetrical, dorso-ventrally flat acoelomate animals.
- Animals are endoparasites. They form external hooks or suckers or both are present to attach host.
- Digestive system is incomplete, branched without anus.
- Excretory system consists of flame cells and canals.
- Sexes are not separate - fertilization is internal and development is indirect.
- Example : Tapeworm, Liver fluke, Planaria.

- (39) Which is the first phylum possess triploblastic acoelomate body organization ?
 (A) Platyhelminthes (B) Arthropoda (C) Annelida (D) Mollusca
- (40) Which phylum possess organ level body organization ?
 (A) Annelida (B) Platyhelminthes (C) Mollusca (D) Arthropoda

- (41) Which phylum possess incomplete, branched digestive system without anus ?
 (A) Annelida (B) Arthropoda (C) Platyhelminthes (D) Mollusca
- (42) Flame cells related with which functions ?
 (A) Digestion (B) Respiration (C) Circulation (D) Excretion
- (43) Which phylum are endoparasite found in human ?
 (A) Arthropoda (B) Annelida (C) Mollusca (D) Platyhelminthes

Answers : (39-A), (40-B), (41-C), (42-D), (43-D)

• **Phylum - Aschelminthes :**

- Aschelminthes are triploblastic, pseudocoelomate, bilaterally symmetrical with organ system level of organization.
- Digestive system is complete. Excretion through branched excretory organ.
- Sexes are separate. Male is smaller than female.
- Fertilization is internal and development is direct. i.e. Viviparous animal.
- Example : Ascaris, Wuchereria.

- (44) In Animal kingdom, which phylum is included in pseudocoelomate ?
 (A) Platyhelminthes (B) Aschelminthes (C) Mollusca (D) Arthropoda
- (45) In which phylum the complete digestive system is observed first ?
 (A) Aschelminthes (B) Annelida (C) Arthropoda (D) Mollusca
- (46) On the basis of sexual dimorphism Wuchereria is which types animal ?
 (A) Unisexual (B) Bisexual (C) Dioecious (D) B and C
- (47) On the basis of reproduction ascaris includes is
 (A) Oviparous (B) Viviparous (C) Ovoviviparous (D) Aparous

Answers : (44-B), (45-A), (46-A), (47-B)

• **Phylum - Annelida :**

- Annelida are triploblastic, Coelomate animal possess bilateral symmetry and metamerically segmentation.
- Mostly aquatic and some are terrestrial, burrowing or tubicolous, free living and occasionally parasite.
- Locomotory organs are setae, parapodia.
- Digestive system is complete. Circulatory system is closed and respiratory pigment haemoglobin is present in blood plasma.
- Nephridia are present as an excretory and osmoregulatory organ.
- Nervous system is with paired cerebral ganglia and double ventral nerve cord.
- Animal are unisexual. e.g., Nereis, Bisexual e.g., Earthworm; Leech - Reproduce by sexual method.
- Example : Earthworm, Leech, Nereis.

- (48) First time true body cavity observed in which phylum ?
 (A) Mollusca (B) Annelida (C) Echinodermata (D) Arthropoda
- (49) First time closed circulatory system observed in which coelomate invertebrate phylum ?
 (A) Annelida (B) Arthropoda (C) Mollusca (D) Echinodermata
- (50) Which structure is present as an excretory and osmoregulatory organs in annelida ?
 (A) Flame cell (B) Nematocytes (C) Nephridia (D) Kidney
- (51) Where does the respiratory pigment haemoglobin present in Leech ?
 (A) Red blood cell (B) White blood cell (C) Thrombocyte (D) Blood plasma
- (52) Which one is locomotory organ in earthworm ?
 (A) Flagella (B) Cilia (C) Parapodia (D) Setae
- (53) Which of the following animal is included in monoecious ?
 (A) Earthworm (B) Leech (C) Liver fluke (D) A, B, C All
- (54) First time nervous system observed in which phylum ?
 (A) Annelida (B) Coelenterata (C) Arthropoda (D) Mollusca

Answers : (48-B), (49-A), (50-C), (51-D), (52-D), (53-D), (54-B)

• **Phylum - Arthropoda :**

- Arthropoda is largest phylum of Animal kingdom. They are triploblastic, coelomate and have bilateral symmetry.
- Animals possess jointed appendage in which body is divided into head, thorax and abdomen. Head and thorax fused to form cephalothorax.
- Sensory organ comprises of simple or compound eye. Chemo and tactile receptors statocysts and auditory organs.
- Exoskeleton is chitinous and sheds at intervals (ecdysis).
- Digestive system is complete circulatory system is of open type. Respiration occurs by body surface, gills, trachea and book lungs.
- Excretory organs are green gland or malpighian tubules.
- They are unisexual animal and fertilization internal, oviparous or ovoviviparous animal. Development may be direct or indirect some of them exhibit parthenogenesis.
- Example : Peripetus, Crab, Scorpion, Prawn, Centipede, Cockroach.

- (55) Which phylum shows ecdysis ?
 (A) Mollusca (B) Arthropoda (C) Annelida (D) Echinodermata
- (56) Which is the excretory organ in arthropoda ?
 (A) Green glands (B) Nephridia (C) Flame cell (D) Nematocytes
- (57) Which phylum possess open circulatory system ?
 (A) Arthropoda (B) Mollusca (C) Amphibia (D) A and B
- (58) Which is the respiratory organ in arthropoda ?
 (A) Gills (B) book lungs (C) Trachea (D) A, B, C All

- (59) In phylum arthropoda exoskeleton is made up of which substance ?
 (A) Chitin (B) Cutin (C) Carotene (D) Calcium carbonate
- (60) Arthropoda is which type of animal, regarding reproduction ?
 (A) Viviparous (B) Ovoviviparous (C) Oviparous (D) B and C
- (61) Which is the largest phylum of Animal Kingdom ?
 (A) Mollusca (B) Arthropoda (C) Annelida (D) Echinodermata

Answers : (55-B), (56-A), (57-D), (58-D), (59-A), (60-D), (61-B)

• **Phylum - Mollusca :**

- Animals included in mollusca are triploblastic, coelomate; bilateral symmetry and unsegmented. Soft body is made up of calcium carbonate.
- Majority animals are aquatic and some are terrestrial.
- Mantle cavity is located between body wall and mantle. In mantle feather like gills present which act as a respiratory organs.
- Digestive system is complete and animals have Radula in mouth, which helps in grinding food.
- Circulatory system is of open type and excretion take place through kidney.
- They are unisexual or bisexual. Example : Chiton, Pila, Dentalium, Pearl oyster, Sepia, Octopus

- (62) Which phylum possess mantle cavity ?
 (A) Arthropoda (B) Mollusca (C) Annelida (D) Echinodermata
- (63) What is function of radula ?
 (A) Intake of food (B) Digestion of food (C) Grinding of food (D) Excretion
- (64) Which is the excretory organ in mollusca ?
 (A) Nephridia (B) Malpighian tabules (C) Green glands (D) Kidney
- (65) In phylum mollusca endoskeleton made up of which substance ?
 (A) Calcium carbonate (B) Chitin (C) Cutin (D) Carotene

Answers : (62-B), (63-C), (64-D), (65-A)

• **Phylum - Echinodermata :**

- They are triploblastic, coelomate, radially symmetrical body with organ system level of organization.
- Animals are exclusively marine. They possess water vascular system of coelomic origin, including tube feet for locomotary function.
- Water vascular system also concerned with respiratory and excretory functions.
- Digestive system is complete.
- Animals are unisexual, fertilization is external and development is indirect through free swimming larva. They possess regeneration power. Example : Starfish, Seaurchin, Sealily, Sea-cucumber, Brittle star.

- (66) Which phylum shows Radial symmetry ?
 (A) Echinodermata (B) Annelida (C) Mollusca (D) Arthropoda
- (67) Which phylum possess water vascular system ?
 (A) Annelida (B) Echinodermata (C) Arthropoda (D) Mollusca
- (68) What is function of tube feet ?
 (A) Digestion (B) Locomotion (C) Respiration (D) Reproduction
- (69) Water vascular system is related with which functions ?
 (A) Respiration (B) Circulation (C) Excretion (D) A, B, C All
- (70) Which animal possess digestive system complete and digestive duct is straight or coiled ?
 (A) Sea-cucumber (B) Brittlestar (C) Sealily (D) A, B, C All

Answers : (66-A), (67-B), (68-B), (69-D), (70-D)

• **Phylum - Hemichordata :**

- Hemichordata are usually primitive chordates - invertebrate chordate.
- They are wormlike unsegmented, bilaterally symmetrical, triploblastic, having organ system level of organization. Exclusively marine, solitary or colonial and mostly tubiculous animals.
- Cylindrical body is divided into proboscis, collar and trunk.
- Digestive tract is complete straight or U-shaped, circulatory system is open type.
- Excretion take place by single proboscis gland which is connected to blood vessels and respiration occurs through gills.
- Animals are unisexual, fertilization is external and development is direct or indirect through free swimming Tornaria larva. Example : Balanoglossus

- (71) Which phylum is included in primitive chordata ?
 (A) Echinodermata (B) Hemichordata (C) Arthropoda (D) Mollusca
- (72) The excretion occurs in hemichordata by which structure ?
 (A) Proboscis (B) Flame cells (C) Nephridia (D) Green glands
- (73) In which invertebrate, chordate animal closed type of circulatory system is observed ?
 (A) Earthworm (B) Pila
 (C) Balanoglossus (D) Man
- (74) Which type of digestive tract is observed in hemichordata ?
 (A) Complete (B) Incomplete
 (C) Straight of U-shaped (D) A and C
- (75) Which types of larva is observed in hemichordata ?
 (A) Tornaria (B) Amphiblastula (C) Parenchymula (D) Planula
- (76) The body of balanoglossus divided into which parts ?
 (A) Proboscis (B) Collar (C) Trunk (D) A, B, C All

Answers : (71-B), (72-A), (73-C), (74-D), (75-A), (76-D)

• **Phylum - Chordata :**

- Animal possess notochord called chordata. They are triploblastic, coelomate and possess bilateral symmetrical structure.
- Skeleton is made up of cartilage or bone. Post anal tail present life long or during some stages of life.
- Digestive system is complete and circulatory system is closed type. They are unisexual animals.
- Phylum - Chordata is divided into three sub-phylum :
 - (1) Urochordata : Notochord is seen during larval stage only and animals are marine. Example : Ascidia, Salpa.
 - (2) Cephalochordata : Notochord persists during the whole life span and extended from head to tail. Example : Amphioxus
 - (3) Vertebrata : Notochord is modified into vertebral column at the adult stage. Body is divided into head, neck, trunk and tail.

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- (77) The endoskeleton of chordate made up of which substance ?
 (A) Cartilage and Bone (B) Cartilage or Bone (C) Hyaline Cartilage (D) Bone
- (78) Phylum chordata is divided in to how many sub phylum ?
 (A) One (B) Two (C) Three (D) Four
- (79) Ascidia included in which sub phylum ?
 (A) Non-chordata (B) Urochordata (C) Cephalo chordata (D) Vertebrata
- (80) Amphioxus included in which sub phylum ?
 (A) Cephalo chordata (B) Vertebrata (C) Non-chordata (D) Urochordata
- (81) In vertebrate animal body divided into how many part ?
 (A) One (B) Two (C) Three (D) Four
- (82) In which phylum nervous system is hollow, single, dorsal and without ganglia ?
 (A) Chordata (B) Non-chordata (C) Prochordata (D) Invertebrata

Answers : (77-B), (78-C), (79-B), (80-A), (81-D), (82-A)

• **Class : Cyclostomata**

- Animals of the class cyclostomata are ectoparasites on fishes during their adult stage. Jaws are absent. Mouth is anteroventral, circular and suctorial.
- Skin is without scale contain unicellular mucus glands. Internal skeleton is fibrous and cartilaginous.
- Heart is two chambered, circulatory system is of closed type, respiration occur by gill slits; one pair of kidney as an excretory organ.
- They are marine but reproduction take place in fresh water. Larva after metamorphosis return to ocean. Example : Lamprey and Hagfish

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- (83) Which animals are included in agnatha, cyclostomata ?
 (A) Lamprey and Hag fish (B) Salpa and Ascidia (C) Silver fish and Jelly fish (D) Hag fish, Salpa
- (84) In which phylum reproduction take place in fresh water, larva after metamorphosis return to ocean ?
 (A) Cephalochordata (B) Cyclostomata (C) Urochordata (D) Vertebrata
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- (85) In which class skin is without scale contains unicellular mucus glands ?
 (A) Amphibia (B) Cyclostomata (C) Reptilia (D) A and B
- (86) Which animal possess two chambered heart ?
 (A) Shark (B) Lamprey (C) Sea horse (D) A, B, C All

Answers : (83-A), (84-B), (85-D), (86-D)

Class : Chondrichthyes - Osteichthyes

Special character	Chondrichthyes	Osteichthyes
Habitat	Marine	Fresh water and marine
Scales	Placoid	Cycloid or ctenoid
Caudal fin	Heterocercal	Homocercal
Endoskeleton	Cartilage	Bone
Mouth	Anterior-Ventrally	Anterior
Gills	5 to 7 pairs	4 pairs
Heart	Two chambered	Two chambered
Fertilization	Internal	External
	Oviparous or Ovoviviparous	Oviparous
Example	Shark, Ray fish	Sea horse, Labeo, Catla

- (87) The exoskeleton of chondrichthyes and osteichthyes made up of which types of scales ?
 (A) Placoid (B) Cycloid (C) Epidermal (D) A and B
- (88) Which fish possess caudal fin heterocercal ?
 (A) Shark (B) Catla (C) Rohu (D) Labeo
- (89) In which class fertilization is external and includes oviparous animals ?
 (A) Osteichthyes (B) Amphibia (C) Chondrichthyes (D) A and B
- (90) In which animals endoskeleton is made up of bones ?
 (A) Labeo-catla (B) Shark - sea horse (C) Shark - Ray fish (D) Labeo - Ray fish
- (91) In sea horse mouth opens at which side ?
 (A) Anterior (B) Posterior (C) Lateral (D) Dorsal

Answers : (87-D), (88-A), (89-D), (90-A), (91-A)

• **Class : Amphibia**

- Amphibia lives in water and on land, hence they are called Amphibians. They are tetrapod.
- External skeleton is absent, skin is moist and acts as a respiratory organ.
- Body is divided into head and trunk. External ear is absent. Internal and middle ears are present.
- Digestive tract is complete. Which terminates into cloaca. Excretory and reproductive tracts also terminate into cloaca.

- Heart is three chambered. With two auricles and one ventricle.
- They are coldblooded, unisexual animal. Fertilization is external and development is through metamorphosis. Example : Frog, Salamander, Ichthyophis.

- (92) Which animal is included in Amphibia, tetrapoda limbless ?
 (A) Snake (B) Ichthyophis (C) Salamander (D) Frog
- (93) In frog which trackt terminate into cloaca ?
 (A) Digestive (B) Excretory (C) Reproductive (D) A, B, C All
- (94) Which animal possess three chambered heart ?
 (A) Crocodile (B) Catla (C) Salamander (D) Labeo
- (95) Which animal class exhibit metamorphosis ?
 (A) Amphibia (B) Arthropoda (C) Reptilia (D) A and B

Answers : (92-B), (93-D), (94-C), (95-D)

• **Class : Reptilia**

- Reptiles represent the first class of vertebrata fully adopted for life on terrestrial habitat.
 - They locomote by crawling. They are carnivores, cold blooded animal.
 - Body divides into head, neck, trunk and tail. External skeleton made up of epidermal scales and skin is dry.
 - Limbs are uniform, short with claws. Limbs are absent in snake.
 - Digestive system is complete, pinna absent, Heart is three chambered (two auricles and one incompletely divided ventricle). In crocodile heart is four chambered.
 - Kidney is present as an excretory organ. Uric acid is released as an excretory substance.
 - They are unisexual, fertilization is internal, oviparous and development is direct in animals.
- Example : Chameleon, Crocodile, Turtle, Calotes, Wall lizard.

- (96) Which is the first class of vertebrata fully adopted for life on terrestrial habitat ?
 (A) Aves (B) Amphibia (C) Mammalia (D) Reptilia
- (97) Which of the following class animals are poikilothermic ?
 (A) Aves (B) Reptilia (C) Amphibia (D) B and C
- (98) Which reptilia possess four chambered heart ?
 (A) Calotes (B) Crocodile (C) Chameleon (D) Turtle
- (99) Which animal releases an excretory substance uric acid ?
 (A) Chameleon (B) Turtle (C) Snake (D) A, B, C All
- (100) Which animal lacks pinna ?
 (A) Kangaroo (B) Bat (C) Turtle (D) Rat

Answers : (96-D), (97-D), (98-B), (99-D), (100-C)

- **Class : Aves**

- Their body is streamlined and it is divided into head, neck, trunk and tail. Jaw is modified into beak and teeth are absent.
- Forelimb modifies into wings for flying.
- Feathers, scales, beak, claws acts as an external skeleton. Bones of internal skeleton are porous and hollow which help for flying.
- The digestive tract has crop and gizzard. Heart is four chambered and aortic arch turns toward right side.
- Respiration take place through lungs and air-sacs associated with lungs, help in flying.
- They are the first vertebrates which are warm-blooded.
- Animals are unisexual, shows internal fertilization and direct embryonic development. They are oviparous animals.
- Example : Pigeon, Crow, Peafowl, Ostrich, Penguin

- (101) Which are first warm-blooded vertebrate animals ?
 (A) Ostrich - Pigeon (B) Peacock - Crow (C) Rat - Dolphin (D) A and B
- (102) Which structure is absent in digestive system of Aves ?
 (A) Teeth (B) Urinary bladder (C) Stomach (D) A, B, C All
- (103) What is the function of airsac ?
 (A) Flying (B) Swimming (C) Excretion (D) A and B
- (104) Which structure is important in class - Aves for flying ?
 (A) Forelimbs modified into wings (B) Air sacs
 (C) Endoskeleton are porous and hollow (D) A, B, C all
- (105) Which bird is flightless ?
 (A) Ostrich (B) Emu (C) Peafowl (D) A and B

Answers : (101-D), (102-D), (103-D), (104-D), (105-D)
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- **Class : Mammalia**

- They possess mammary gland so known as mammalia. They are found in all types of habitat.
- External skeleton includes hairs on body, horns, hoof and nail. Two pair of limbs are present which are used in locomotion. External ear develop as pinna.
- They possess four types of teeth. i.e. canines, incisors, premolars and molars. Permanent teeth develops after the milk teeth drop.
- Digestive tract is complete. Heart is four chambered and aortic arch turns toward left.
- Respiration take place through lungs. They are warm-blooded.
- The are unisexual, fertilization is internal and shows direct embryonic development, usually viviparous animals. Platypus is oviparous.

Example : Kangaroo, Rabbit, Rat, Elephant, Dolphin, Whale, Bat.

- (106) In which class external ears develop as pinna ?
 (A) Amphibia (B) Mammalia (C) Reptilia (D) Aves
- (107) Which of the following is correct for Platypus ?
 (A) Oviparous (B) Viviparous (C) Ovoviviparous (D) A and B
- (108) In which class circulatory system is of closed type and aortic arch turns toward left ?
 (A) Reptilia (B) Aves (C) Mammalia (D) Amphibia
- (109) How many types of teeth are found in mammalia ?
 (A) Two (B) Four (C) Three (D) Five
- (110) What is present as external skeleton in mammalia ?
 (A) Nail and hoof (B) Hairs (C) Horns (D) A, B, C All
- (111) Which mammalian adapted for aerial life ?
 (A) Whale (B) Dolphin (C) Platypus (D) Bat
- (112) Which class of tetrapode included in homeothermic animals ?
 (A) Amphibia - Reptilia (B) Mammalia - Aves
 (C) Amphibia - Aves (D) Reptilia - Mammalia
- (113) Which animals are included in Mammalia ?
 (A) Dolphin (B) Platypus (C) Whale (D) A, B, C All

Answers : (106-B), (107-A), (108-C), (109-B), (110-D), (111-D), (112-B), (113-D)

• **True - False (T - F) types questions :**

Select proper answer from following :

- (114) (1) All vertebrates are chordate.
 (2) All chordata are not vertebrates.
 (3) Aschelminthes are pseudocoelomate.
 (4) Phylum Annelida and after it all are coelomate animals.
 (A) T, F, T, F (B) T, T, T, T (C) F, T, T, F (D) T, F, T, T
- (115) (1) Protozoan reproduce sexually by conjugation, binary fission, multiple fission and budding.
 (2) Digestive tract of Aves and Arthropoda possess gizzards.
 (3) Aves and Reptilia excrete uric acid during excretion.
 (4) Ichthyophis and Penguin shows metamorphosis.
 (5) Nematocytes is characteristic of reptilia.
 (A) T, T, F, T, F (B) F, T, F, T, F (C) F, T, T, F, F (D) T, F, T, F, T
- (116) (1) Porifera possess amphiblastula and coelenterata possess planula larva.
 (2) Platyhelminthes possess incomplete digestive tract.
 (3) Annelida possess haemoglobin in blood plasma.
 (4) Arthropoda do not shows ecdysis.
 (5) Mollusca possess tube feet.
 (A) T, T, T, F, F (B) T, T, F, T, T (C) T, F, T, F, F (D) T, T, F, F, T

- (117) (1) In balanoglossus body is divided into proboscis, collar and trunk.
 (2) Hag fish and Ichthyophis possess skin, without scale.
 (3) Chondrichthyes possess placoid scales and osteichthyes possess cycloid scales.
 (4) Crocodile and whale possess four chambered heart.
 (A) T, T, T, F (B) T, F, T, F (C) F, T, T, F (D) F, F, T, T
- (118) (1) In Ascidia notochord is seen during larval stage and in Amphioxus notochord persists during the whole life span.
 (2) Vertebrate possess heart two, three, four chambered and located on dorsal side.
 (3) Reptila and aves are oviparous while platypus are viviparous.
 (4) In amphibia digestive system, Respiratory system and Reproductive system open into cloaca.
 (5) Reptila possess epidermal scales and aves lacks scales.
 (A) T, T, F, T, F (B) T, F, F, T, F (C) T, F, T, T, F (D) F, T, F, T, F
- (119) (1) Kangaroo and ostrich are homeothermic.
 (2) Bat possess four types of teeth.
 (3) Amphibia lacks external pinna.
 (4) Ray-fish possess four pair of gills.
 (5) Aves and osteichthyes possess air bladders.
 (A) T, F, T, F, T (B) T, T, F, F, T (C) T, T, T, F, T (D) F, T, F, F, T

Answers : (114-B), (115-C), (116-A), (117-A), (118-C), (119-C)

• **A - Assertion, R - Reason type questions :**

Choose the correct answer from given option :

- (A) A and R both are true and R is correct explanation of the A.
 (B) A and R both are true and R is not correct explanation of the A.
 (C) A is true and R is false.
 (D) A is false and R is true.

- (120) Assertion A : First time closed circulatory system observed in Annelida
 Reason R : In earthworm respiratory pigment is present in blood plasma.
 (A) (B) (C) (D)
- (121) Assertion A : Ascaris are pseudocoelomate.
 Reason R : In Ascaris mesoderm is present as scattered pouches.
 (A) (B) (C) (D)
- (122) Assertion A : Echinodermata possess water vascular system.
 Reason R : Water vascular system concerned with locomotion, respiration and excretion.
 (A) (B) (C) (D)
- (123) Assertion A : Salamander is unisexual animal, shows external fertilization and metamorphosis.
 Reason R : Salamander is amphibian animals.
 (A) (B) (C) (D)

(124) Assertion A : Aves can easily fly.

Reason R : In Aves feathers, beak, claws act as external skeleton while endoskeleton are porous and hollow and forelimbs modified into wings.

(A)

(B)

(C)

(D)

Answers : (120-A), (121-A), (122-B), (123-A), (124-A)

(125) Select correct option :

Column - I

- (a) Chondrichthes
- (b) Osteichthyes
- (c) Reptilia

Column - II

- (i) Cycloid scales
- (ii) Epidermal scales
- (iii) Placoid scales

- (A) a - iii, b - i, c - ii
- (B) a - ii, b - iii, c - i
- (C) a - iii, b - ii, c - i
- (D) a - ii, b - iii, c - i

(126) Select correct option :

Column - I

- (a) Frog
- (b) Pisces
- (c) Liverfluke
- (d) Coelenterata

Column - II

- (i) Flame cell
- (ii) Three chambered heart
- (iii) Planula larva
- (iv) Air-bladder

- (A) a - iv, b - iii, c - i, d - ii
- (B) a - ii, b - iv, c - i, d - iii
- (C) a - iv, b - iii, c - ii, d - i
- (D) a - ii, b - iii, c - iv, d - i

(127) Select correct option :

Column - I

- (a) Porifera
- (b) Earthworm
- (c) Cockroach
- (d) Rabbit

Column - II

- (i) Viviparous
- (ii) Choanocytes
- (iii) Nephridia
- (iv) Malpighian tubules

- (A) a - iii, b - iv, c - ii, d - i
- (B) a - ii, b - iv, c - iii, d - i
- (C) a - ii, b - iii, c - iv, d - i
- (D) a - ii, b - iii, c - i, d - iv

(128) Select correct option :

Column - I

- (a) Ommatidia
- (b) Nematocytes
- (c) Setae
- (d) Osculum

Column - II

- (i) Porifera
- (ii) Arthropoda
- (iii) Coelenterata
- (iv) Nephridia

- (A) a - ii, b - iii, c - iv, d - i
- (B) a - iii, b - iv, c - ii, d - i
- (C) a - iv, b - iii, c - i, d - ii
- (D) a - ii, b - iv, c - i, d - iii

(129) Select correct option :

Column - I

- (a) Triploblastic
- (b) Diploblastic
- (c) Contractile vacuole
- (d) Proboscis

Column - II

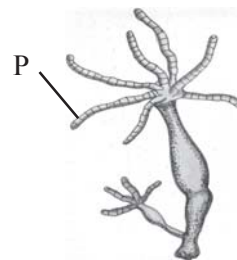
- (i) Protozoan
- (ii) Hemichordata
- (iii) Annelida
- (iv) Coelenterata

- (A) a - iv, b - iii, c - ii, d - i
- (B) a - iii, b - iv, c - i, d - ii
- (C) a - ii, b - i, c - iv, d - iii
- (D) a - iii, b - iv, c - ii, d - i

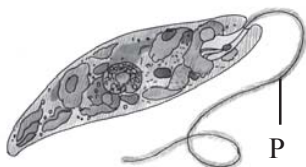
Answers : (125-A), (126-B), (127-C), (128-A), (129-B)

(130) In given figure P indicates...

- (A) Nemotocytes (B) Tentacles
(C) Hypostome (D) Choanocytes



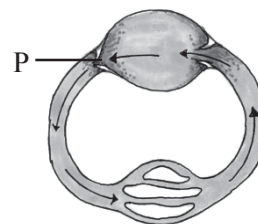
(131) In given diagram P is related with which functions ?



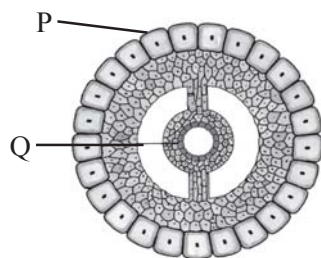
- (A) Locomotion (B) Digestion
(C) Circulation (D) Excretion

(132) In given diagram P indicates...

- (A) Valve (B) Artery
(C) Ostia (D) Vein



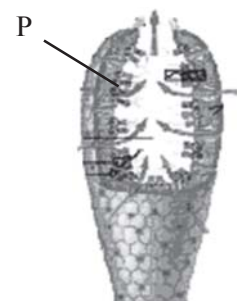
(133) In given diagram P and Q indicates...



- (A) Mesoderm, Ectoderm
(B) Ectoderm, Mesoderm
(C) Ectoderm, Endoderm
(D) Endoderm, Ectoderm

(134) In given diagram P indicates...

- (A) Spongilla
(B) Choanocytes
(C) Spongocoel
(D) Osculum



Answers : (130-B), (131-A), (132-A), (133-C), (134-B)

• **Questions for NEET :**

(135) Which is the limbless amphibian animal ?

- (A) Toad (B) Ichthyophis (C) Frog (D) Salamandar

(136) Which animal is cold blooded ?

- (A) Turtle (B) Penguin (C) Whale (D) Kangaroo

(137) The exoskeleton of pisces is made up of

- (A) Bone (B) Cartilage (C) Hair (D) Scales

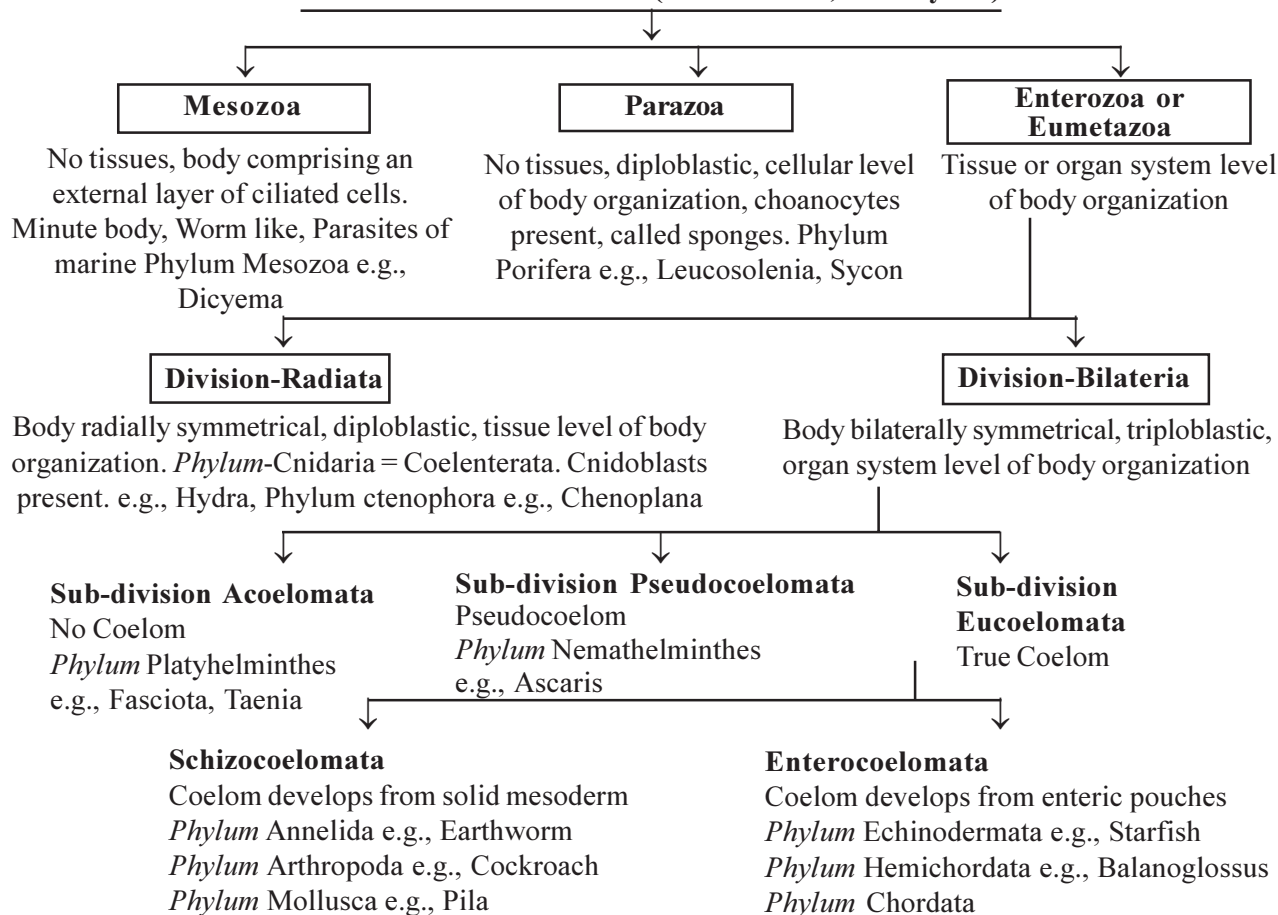
(138) Undeveloped artery and vein with open circulatory system is characteristic of which phylum ?

- (A) Arthropoda (B) Aves (C) Coelenterata (D) Mollusca

- (139) Which is common structure in cockroach and earthworm ?
 (A) Trachea (B) Closed circulatory system (C) Ventral nervecord (D) Nephridia
- (140) In which phylum diploblastic animals are included ?
 (A) Platyhelminthes (B) Echinodermata (C) Coelenterata (D) Mollusca
- (141) In class aves which organ is modified ?
 (A) Fore limb (B) Pelvic girdle (C) Hind limb (D) Pectoral girdle
- (142) In which phylum metameric segmentation is observed for the first time ?
 (A) Annelida (B) Arthropoda (C) Platyhelminthes (D) Mollusca
- (143) In presence or absences of which structure pisces are classified into chondrichthyes and osteichthyes ?
 (A) Laterline (B) Middle ear (C) Operculum (D) Mucin
- (144) Give the name of excretory organ of prawn.
 (A) Flame cell (B) Nephridia (C) Green gland (D) Tube feet
- (145) Which of following is oviparous mammalia ?
 (A) Dolphin (B) Platypus (C) Penguin (D) Rabbit
- (146) Which of the following is not classified as amphibian ?
 (A) Ichthyophis (B) Frog (C) Turtle (D) Salamander
- (147) Which of following phylum is acoelomate ?
 (A) Annelida (B) Arthropoda (C) Echinodermata (D) Platyhelminthes
- (148) In which of the following Air bladders is observed ?
 (A) Brittle Star (B) Star Fish (C) Chondrichthyes (D) Osteichthyes
- (149) Mesoglea occur in between which two germinal layers ?
 (A) Ectoderm and Mesoderm (B) Mesoderm and Endoderm
 (C) Below Mesoderm (D) Ectoderm and Endoderm
- (150) In which animal jaws are absent ?
 (A) Rohu and Labeo (B) Lamprey, Hag fish (C) Labeo, Catla (D) Sea horse, Hag fish

Answers : (135-B), (136-A), (137-D), (138-A), (139-C), (140-C), (141-A), (142-A), (143-C), (144-C), (145-B), (146-C), (147-D), (148-D), (149-D), (150-B)

KINGDOM - ANIMALIA (Multicellular, Eukaryotic)



Phylum - Chordata

