1. The word Annelida is introduced by J.B.Lamarck (1809).
2. Annelida is the first Eucoelomale and Schizocoelomate phylum.
3. Number of species in Annelida 8670.
4. Phylum Annelida consists of three classes Polychaeta, Oligochaeta and Hirudinea.
   Bristle worms belong to Polychaeta
   Earthworms belong to Oligochaeta
   Leeches belong to Hirudenia
5. Class Archiannelida which was included under the phylum, is treated as a separate phylum at present.
6. Number of species of earthworms reported in India 40.
7. Smallest earthworm is Chaetogaster annandalei.
8. Largest earthworm is Megascolides australis.
9. The longest earthworm of our country is Drawida grandis of South India.

PHERETIMA POSTHIUMA

1. Earthworms are considered as farmers friends as they increase the soil nutrients and help in agriculture.
2. The genus Phcrctima is represented by 13 species in India.
3. Phcretima posthuma is the common Indian earthworm.
4. A monograph on Phcretima is published by K.N.Bahl.
5. Earthworm belongs to phylum Annelida, class Oligochacta.
6. Phcrctima is a triploblastic, bilaterally symmetrical, schizocoelomate animal.
7. Pheretima is a burrowing and nocturnal animal.
8. Pheretima lives in upper layers of damp soil rich in decaying organic matter.
9. The presence of Pheretima can be detected by worm castings.
10. The dark brown colour of dorsal surface is due to the presence of porphyrin.
11. Porphyrin protects the animal from UV radiation.
12. Number of segments or metameres in Pheretima vary from 100 to 120.
13. The first segment or buccal segment is also called Peristomium.
14. The uncounted part in earthworm is prostomium.
15. Clitellium or cingulum is formed 14 to 16 segments.
16. A single median female genital aperture is present on ventral surface of 14 segment.
17. A pair of spermiducal or male genital apertures are present on ventral surface of 18 segment.
18. Two pairs of genital or copulatory papillae are present on ventral side of 17th and 19th segments.
19. Four pairs of spermathecal openings are present on ventrolateral side in segmental grooves between 5/6, 6/7, 7/8 and 8/9.
20. The first dorsal pore lies in the groove between the segments 12 and 13.

21. A dorsal pore is present in each of the inter segmental groove from 12/13 onwards to the last.

22. Nephridiopores are present from 3rd segment onwards

SETAE

- **i.** The locomotor organs of earthworm are Setae.
- **ii.** Each setam has a base embeded in Setal sac, middle swollen nodulus and neck projecting above body wall.
- **iii.** Setae are moved by protractor (1 pair) and retractor (one) muscles.
- **iv.** Protractor & retractor muscles are connected to circular muscles.
- **v.** Retractor muslces arc attached to circular muscle strand present close to the parietal layers.
- **vi.** Setae are absent in first and last segments.
- **vii.** Setae are dropped in cingulum of mature earthworm.
- **viii.** In Octochaetine arrangement 8 setae are present, two pairs are arranged each side. Two pairs are ventral and other two pairs are ventrolateral in position. Eg: Octochaetus, Lumbricus.
- **ix.** In Mcgascolex and Pheretima in each segment a number of setae are present around the body called perichaetine arrangement.
- **x.** Pheretima moves by alternate contraction and relaxation of circular and longitudinal muscles.
- **xi.** The setae atid coelomic fluid assist in locomotion.
- **xii.** On smooth surfaces like glass earthworm uses its mouth as sucker.
- **xiii.** The nerve cord coordinates the muscular contractions during locomotion.

BODY WALL

1. Body wall consists of cuticle, epidermis, dermis, circular muscles, logitudinal muscles and outer coelomic epithelium or parietal layer.
2. Body wall of Pheretima is described as dermomuscular.
3. Cuticle is made up of mucopolysaccharides, collagen and gelatin proteins.
4. Epidermis is single layered consisting of four types of cells.

i. Large gland cells are two types: mucous secreting cells and albumin secreting cells. Mucous cells are more in number.

ii. Supporting cells : These are columnar and support the bodywall. These are more numerous than gland cells.

iii. Basal cells: Lie at the base of columnar cells and **totipotent.** Nucleus is round.

iv. Receptor cells : These help in receiving external stimuli. These are sensory in function.

5. Dermis is also called basement membrane.
6. Outer circular muscles form continuous layer.
7. Outer longitudinal muscles are arranged in bundles alternating with setal sacs.
8. Strand of circular muscles is also present close to parietal layer.
9. Outer coelomic epithelium or parietal layer is a derivative of mesoderm.
10. Parietal layer take part in the formation of inter segmental septa and primordial germ cells.

COELOM

1. Coelom or perivisceral cavity is the space between alimentary canal and bodywall filled with coelomic fluid.
2. The first septum is present between the segments 4/5.
3. Septa arc absent in the first four segments and between the segments 9/10.
4. The septa between the segments 5/6, 6/7, 6/8, 8/9 are thick and oblique.
5. The anterior six septa form six cones.
6. Apices of the cones are directed backward.
7. The first 9 septa are without perforations.
8. Typical septum present between 14/15 and contains circular sphinctered pores.
9. Septal pores are also known as sphinctered pores.
10. Coelomic fluid acts like hydrostatic skeleton.
11. Coelomic fluid contains four kinds of cells.

    Phagocytes : These are largest and. numerous with several membranous folds on the surface ingest bacteria.

    Yellow cells: These are small containing yellow granules called chloragosomes. They store food besides deamination and excretory function.

    Circular cells: These form about 10% of Coelomic cells and have characteristic marking on their surface.

    Mucocytes: These are elongated cells secreting mucus.
12. Coelomic fluid is slightly alkaline (7.9 pH).
13. Coelomic fluid oozes out through dorsal pores.

ALIMENTARY CANAL

1. Chloragogen cells arise from visceral peritonium.
2. Inner longitudinal and inner circular muscles help in peristalitic movements of alimentary canal.
3. The in word fold of cndoderm along mid dorsal line from 27th on words upto 25 pre- anal segment is called typhlosole.