

Topic 2: DISTINGUISHING CHARACTERS BETWEEN INSECT AND MITE

GENERAL CHARACTERISTICS OF CLASS INSECTA

1. Segmented body
 2. Segments grouped into 2 or 3 regions (tagma) known as Tagmosis.
 3. Renewable chitinous exoskeleton
 4. Grow by molting.
 5. Bilateral symmetry of body.
 6. Body cavity filled with blood and called as haemocoel.
 7. Tubular alimentary canal with mouth and anus at anterior and posterior ends.
 8. Dorsal heart with valve like ostia.
 9. Dorsal brain with ventral nerve cord.
 10. Striated muscles (with dark and light bands).
 11. No cilia (hair like vibratile structure on the surface of the cell).
 12. Excretion takes place by means of Malpighian tubules that empty into the alimentary canal, the excreted materials passing to the outside by way of the anus.
- e.g. Cockroaches, houseflies, mosquitoes, butterflies, bees, bugs, ants, beetles etc.

GENERAL CHARACTERISTICS OF CLASS ARACHNIDA

1. A typical adult arachnid has two distinct body regions: cephalothorax and abdomen.
 2. The anterior body region is cephalothorax, where cephalon (head) and thorax fused together, bears 4 pairs of legs- so the Arachnids called Octapoda (eight legs); a pair of chelicerae that are normally chelate; a pair of pedipalps that may be chelate.
 3. All eyes are simple.
 4. They have no antennae.
 5. They have no wings.
 6. The posterior body region is abdomen, which is large but has no external gills or locomotor organs.
 7. Excretion by Malpighian tubules.
 8. Respiration by book lungs and trachea.
 9. The sexes are separate and the reproductive organs are near the anterior portion of the abdomen and open through a single orifice.
- e.g. spiders, mites, ticks etc.

Insect	Mite
Insects are hexapoda (i.e. six legs)	Mites are octapoda (i.e. eight legs)
Body is divided into head, thorax and abdomen; where head and thorax are separated.	Body is divided into cephalothorax and abdomen; head and thorax combined to form a cephalothorax.
Antennae present	Antennae absent
Both simple and compound eyes present	All eyes are simple
Wings may be present or not	Always wingless
Size: small to large.	Size: minute.