shorter, non-ciliated (ectodermal in origin)
Atrium - gill clefts lead into a wide chamber occupying most of the space b/w body wall and pharynx (surrounding ventral & lateral regions of the pharynx). It ends blindley in front and opens through atriopore behind. The cilia lining the gill clefts produce a current setting in at the mouth, entering the pharynx, passing thence by gill slits into the atrium and out at the atriopore. The current is both a respiratory and a food current, the animal feeding passively on the minute organisms in the surrounding water.

Part-2

Food particles in the passing water are caught by the mucus lining of the gill basket and passed into the gut, where they are exposed to the action of enzymes.

Excretion - Above the pharynx is the excretory system made up of nephridia which opens into an excretory canal leading to the atrium. The endostyle corresponds to thyroid in vertebrate

Reproduction - Male and female amphioxi are identical in appearance but differ internally in the nature of gonads which form in rows on the walls of the atrial cavity. Breeding takes place several times a year in tropical region. Sacs containing eggs or sperm burst & discharge their content into the water through an opening on the underside of the body.

Eggs are fertilized in water and after about 2 days microscopic ciliated larvae develop from the fertilized egg. The larvae are carried with ocean currents for several weeks before metamorphosing into juvenile amphioxi.

Because they don't have a braincase or cranium of a vertebrate they are often called Acraniata.

The bodies of lancelets are made up of serially repeated units (segments) that include blocks of muscles called metameres. This segmentation also extends to the nerves that supply the myotomes and to some body cavities, excretory structures and other parts.

Nervous system — single, hollow dorsal nerve cord has a slight swelling at the front that resembles a brain. Nerves arise from nerve cord in groups that roughly compare to those of vertebrates in arrangement and in the regions supplied.

Sense Organs — small eye like organ in the nerve cord can detect the direction of light and its intensity. Various areas of the body surface including some near the mouth detect chemicals in the water and thereby aid in feeding.

Circulatory system — They lack a heart. Blood is forced through the closed system by contractile blood vessels (especially one called the ventral aorta) and by blood vessels of the gills. Blood passes forward from the rear of the body to the ventral aorta which is located beneath the endostyle and then branches upward through vessels in the gills. Most of the

blood then passes towards the rear of the animal, some of it moving thru capillaries in the intestine and taking up food. From the post end of the body, blood passes forward and then makes a detour thru capillaries in the caecum back to the ventral aorta. There are no corpuscles in the blood.

Skeleton – Exoskeleton absent
– endoskeleton present (neither bony nor cartilaginous)
Notochord – chief axial endoskeleton. Structurally elongated, narrow, cylindrical & rod like.
Other skeletal structures – fin ray boxes supporting fins, oral ring supporting oral hood, gill rods supporting gill slits.

Coelom – True coelomate
Enterocoelomate filled with coelomic fluid.

Atrium – Space formed by metapleural folds one on either side of the gill slits of embryo. Gill slits open directly into atrium.