



Assignment

M.Sc. Zoology
Semester-II

Title of Assignment:

Student Name:

Roll Number:

KMGGPGC

Heart :-

The heart is a muscular organ in most animals, which pumps blood through the blood vessels of the circulatory system. Blood provides the body with oxygen and nutrients.

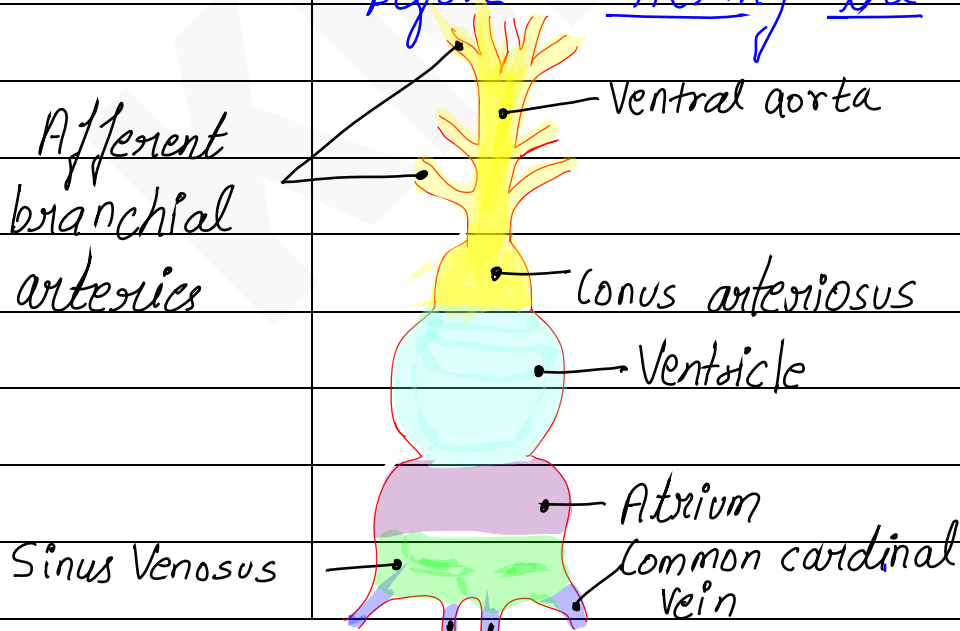
- Location :- In humans, the heart is located between the lungs, in the middle compartment of the chest.

Details

System	Circulatory
Artery	Aorta, pulmonary trunk and right and left pulmonary arteries, right coronary artery, left main coronary artery
Vein	Superior vena cava, Inferior vena cava, right & left pulmonary veins, great cardiac vein, small cardiac vein, anterior cardiac vein
Nerve	Accelerans nerve, Vagus nerve

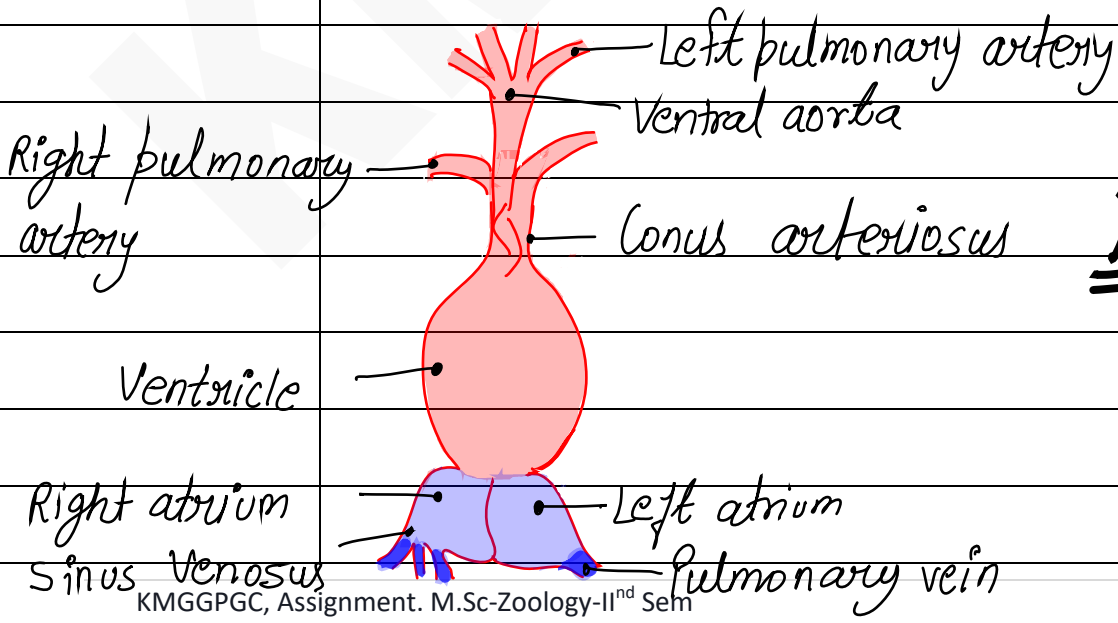
Comparative Anatomy of Hearts :-

Two chambered heart :- The heart of fishes are two chambered heart, they have only one atrium and one ventricle. In that respect the fishes heart resembles the embryonic condition of all other vertebrate animal. Afferent branchial arteries develop from aortic arches 3, 4, 5 and 6 to supply blood to the gills. The conus arteriosus is a muscular extension of the ventricle which leads into the gills. The conus arteriosus is a muscular extension of the ventricle which leads into the ventral aorta. At the posterior end of the heart is the sinus venosus, a thin walled space where blood from the veins gathers before entering the atrium.



Fish heart Dig

Three Chambered heart :- The frog and other amphibians have three chambered heart. The heart has a divided atrium segment. The right atrium receives blood from systemic circulation, while the left atrium receives blood from the lungs. Oxygenated blood from the left atrium is then moved to the single ventricle where it is allowed to partially mix with deoxygenated blood from the right atrium. Blood from the right side of the ventricle is shifted by the spiral valve to the left and dorsal aspect of the conus arteriosus in order to pass into the pulmonary arteries. Blood from the left side of the ventricle is directed by the spiral valve to the ventral aorta in order to send higher oxygen blood to the systemic circulation.



Frog heart Dig

Three and half (3 1/2) Chambered heart :-

Reptiles have 3 1/2 cha. heart. In the 3 1/2 Cha. heart the ventricle is partially divided. This separation decreases the mixing of left side oxygenated blood with deoxygenated blood of the right ventricle. Both the right fourth arch & left fourth arch supply blood to the dorsal aorta (as in fish & Amphibians). Left arch blood is deoxygenated & dilutes the oxygen saturation in the dorsal aorta when the lungs are used. This mixing can be beneficial in aquatic reptiles when submerged by not concentrating deoxygenated blood in one part of the system.

