Marks. 2.

Q 1) What is the literal meaning of Dipnoi?

Ans. Presence of two internal nostrils.

2) Why fish heart is regarded as single circuit venous heart. ?

Ans. Fishes get deoxygenated blood (venous blood) from various parts of the body into heart and supply this blood from heart to gill for oxygenation and after oxygenation blood instead to return heart directly supply to the various parts of body through efferent branchial arterial system. Therefore fish heart is always filled with venous blood and blood circulates only one time, there the heart of fish is regarded as single circuit venous heart.

Q) What do you mean carotid labyrinth?

Ans In toad just at the point of bifurcation of carotid artery and towards the base of internal carotid artery there is a small swelling, known as carotid labyrinth. The inner cavity of the carotid labyrinth contains a network of small vessels and forms a spongy structure. It acts as a baroreceptor to control blood pressure in the internal carotid arteries.

(2) Describe the heart modification of Dipnoi

a) The lung fish heart is modified from that of other bony fishes. The first chamber to received returning blood is still the sinus venosus.

b) In all three lung fish genera, the single atrium is partially divided internally by an internal septum (pulmonalis fold) that difines a large right and smaller left atrial chamber.

3) Pulmonary veins conveying blood from the lungs empty into the sinus venosus (Australian lung fish, Neoceratodus sp.) or directly into the left atrial chamber (South American lung fish, Lepidosiren, and African lung fish, Protopterus sp). The sinus

Venosus converging systemic venous blood opens into the right atrial chamber.

4) The auricles are communicated with the ventricle by a large auriculoventricular aperture. In place of the atrioventricular valves is the atrioventricular plug, a raised cushion in the wall of the ventricle. It moves into and out of the opening from the atrium, like the A.V. valves, to prevent retrograde flow of blood into the atrium.

(5a) The ventricle is also divided internally, but only partially by an interventricular septum.

Within dipnoans, the ⊗ South American lung-fish shows the greatest degree of both ventricular and atrial internal subdivision. The Australian lung fish shows the least. Alignment of the interventricular septum, atrioventricular plug and interatrial septum establishes internal channels within and through the heart. When the lung fish breathes air, the left channel tends to receive oxygenated blood returning from the lungs. The right channel ~~tends~~ tends to carry deoxygenated systemic blood. Thus, despite the anatomically incomplete internal separation of the lung fish heart, blood entering from the sinus venosus does not tend to mix with blood returning from the lungs.

(6) The spiral valve within the conus arteriosus aids in separating oxygenated and deoxygenated blood.