Bsc. Part - II. Paper - IIT

General characteristics of class Reptilia

The reptiles arose in the carboniferous from labyrinthodont amphibian stock. The living reptiles today have 5,000 known species. Reptiles are ectothermal terrestrial or aquatic tetrapoda. Generally they have an exoskeleton of dry epidermal scales below which in some there are bony dermal plates also. Endoskeleton is more completely bony than in amphibians. The skull has one condyle, vertebral column is differentiated into regions, vertebrae are gastric centrums, and in living forms two vertebrae form a sacrum, iliosacral articulation is postacetabular. Limbs are Pentadactyl ending in claws. Lungs are sole respiratory organ Ventricles begins to divide into two parts, Conus arteriosus has disappeared but the sinus venosus persists. The ventral aorta is divided into three trunks. Kidneys are metanephric with no nephrostomes, they are associated with water conservation, excretory waste is mostly uric acid. There are 12 pairs of cranial nerves. There is a cloaca which is often complicated. Fertilization is internal because male has single or double penis. Reptiles are the first true land vertebrates because along with birds and mammals they have evolved an egg which is laid and develops on land, the embryo developing within embryonic membrane consists of amnion and allantois which bring about embryonic respiration and excretion a yolk sac provides nourishment, consequently the three classes together

are known as Amniota. Even aquatic reptiles come on land to lay eggs. gill pouches are present in the embryo but gills are never formed.

The 'true' reptiles flourished in the mesozoic era with giant dinosaurs and placiosaurs dominating the earth and seas. They are terrestrial, aquatic and aerial forms in abundance, hence the mesozoic era is called the age of reptiles. Some of the earliest reptiles, the Cotylosaurs called the stem reptiles, so closely resembled the labyrinthodont amphibians that it is not easy to distinguish between the two groups. By the Permian the first great radiation of reptiles was underway with numerous anapsid and Synapsid forms predominating. In late Triassic further reptilian radiation was produced giving rise to dinosaurs and pterosaurs belonging to Archosauria, some of which were very large and spectacular and dominated the earth. Their only survivors are the crocodilians. Some of these archosaurs were the ancestors of birds and mammals, and some had given rise to the present day reptiles. Most of these giant reptiles died out in late cretaceous it is not known what caused their disappearance, probably there was excessive specialization and low rate of reproduction. Climate and ecological changes occured. there was at that

a wide spread elevation of earth's surface resulting in changes of temperature, vegetation, food supply, humidity and other climatic changes all of these along with the predaceous ancestral mammals which had come into being may have combined to exterminate the ruling reptiles. Thus the most of the reptiles have disappeared a few have persisted to the present day with little change, other evolved further and gave rise to modern living reptiles which live mostly in the tropical and sub tropical regions, and yet others gave rise to birds on the one hand and to mammals on the other. The reptiles living today are lizards, snakes, turtles and Crocodiles.

eg - Uromastix

Systematic position -

Phylum - Chordata
Group - Vertebrata
Subphylum Gnathostomata
class - Reptilia
Sub class - Diapsida
Super order - Lepidosauria
order - Squamata
Sub order - Lacertilia
Genus - Uromastix
Species - hardwickii