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B. Sc - II, (Zoology Hon.)
(Paper - III)

AMPHIBIA

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The amphibians are the first vertebrate to become adapted for terrestrial life and may be distinguished from the choanate fishes (their predecessors) mainly by their — (i) Pentadactyle Limbs. (ii) The absence of fin rays in the unpaired fins if present, and (iii) The presence of middle ear. The special features of the amphibians are as follows:—

- (1) These are Poikilothermal (cold blooded), adapted to lead amphibious life on land and in fresh water.
- (2) The integument is smooth or rough, glandular, moist, lack hairs, feathers or scales. (Scales hidden in the skin if present.)
- (3) These have tetrapodus pentadactyle type limbs.
- (4) These have two external nostrils communicating with buccal cavity through internal nares.
- (5) Respiration is performed by gills, lungs, skin or lining of buccal cavity.
- (6) Heart is three chambered, two auricles and one ventricle, and has a Conus provided with valve.

- (7) Aortic arches are symmetrical (3 pairs), namely, Carotid, systemic and pulmonary.
- (8) Circulatory system contains both hepatic as well as renal portal systems. Erythrocytes are oval, biconvex and nucleated.
- (9) Excretion is performed by mesonephros kidney with persistent nephrostome. Both urogenital duct and rectum open to the exterior through cloaca.
- (10) Skull is dicondylic, movably articulated to the vertebral column.
- (11) The number of cranial nerves is ten pairs.
- (12) They are mostly oviparous. Egg is mesolecithal, Fertilisation is external & internal. Cleavage is holoblastic unequal.
- (13) Jaw suspension is autostylic as hyomandibular is not needed for the purpose. The hyomandibular has been converted into columella auris, which lies in the upper part of the spiracle b/w the inner ear and tympanic membrane.
- (14) Development is indirect with a tadpole larva which resembles to fish in having certain characters.