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B.Sc. Part II Zoology (Hons) Paper III A
Gr 3(h): General Organisation of
Primates (Part-I)

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Introduction :- Order Primates, is a group of animals from class Mammalia of subphylum Vertebrata. As we all know, ~~these~~ animals of class Mammalia are hair clad, air-breathing, warm-blooded, oviparous or viviparous animals. They are classified into subclasses - Prototheria (Egg-laying Mammals), Metatheria (Marsupial pouch bearing animals) and finally into subclass Eutheria bearing mammary glands and hairs on their body. The order Primate is very interesting because they include Man, lemurs, Tarsiers, Monkeys & Apes. They inhabit chiefly warmer parts of the world. They stand first in the animal kingdom in brain development. However, they are relatively unspecialized and mostly tree-dwelling (arboreal) and most of their limbs have 5 digits and generally

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bear nails instead of claws. Great toe and thumb are opposable to other digits for grasping. Their eyes are in front of head and meant for stereoscopic vision. Their organisational characteristics can be summarised as follows —

- ① These are mammals with well-developed brain. Cerebrum is large and convoluted.
- ② Five digits of hand and foot with flat nail.
- ③ Thumb and great toe are shorter and opposable for grasping.
- ④ Eyes are directed forward and surrounded by bony ring.
- ⑤ Femur has no third trochanter.
- ⑥ Mode of walking is plantigrade.
- ⑦ Placenta discoidal or metadiscoidal and haemochorial.

This order is divided into three sub-orders: Lemuroidea, Tassioidea and Anthropoidea. Anthropoidea is further subdivided into two infraorders — Platyrrhina and Catarrhina.

Organisational characteristics of animals belonging to suborder Lemuroidea are —

- (i) Exclusively arboreal, nocturnal, Carnivorous and solitary.

(ii) Head with elongated snout (snout).
Eyes lateral with poor vision.

- (iv) Orbits confluent with temporal fossae.
- (v) Long tail is never prehensile.
- (vi) Forelimbs are shorter than hindlimbs.
- (vii) Second toe or finger with claw but the rest have flat nails.
- (viii) Cerebellum is not covered by cerebrum.
- (ix) Duplex uterus, clitoris and with urethra.
- (x) Placenta diffused, non-deciduate.
- (xi) Dental formulae $\frac{2133}{2133} = 36$.

For example: Lemurs are found only in Madagascar and neighbouring islands. Their fossils of the Palaeocene and Eocene are found in Africa, Europe and America. These are supposed to be lowest primates. The head and skull are long, face is fox like with cleft and moist upper lip, the large eyes are directed sideways. There is no binocular vision. Hands are broad. Thumbs and great toes are opposable. Digits with nails but second toe bears a long claw. Mammaries are thoracic and inguinal. The tail is long and bushy. The penis is os penis and this bone is also found in clitoris. Dentition primitive, $2, 1, 3, 3 / 2, 1, 3, 3$. It has a loud voice. It is nocturnal, timid and arboreal keeping on branches, balances with its tail. It eats fruit, insect & eggs. Lemurs are absent from Madagascar. They occur in Africa and in Asia.

The Cylinder Loris (*Tardigradus*) is found in Southern India and Sri Lanka, while *Nycticebus bengalensis* is found in Northern India. Their face is shortened and eyes are enlarged. Tail is lacking. They are also arboreal, nocturnal and possess a toothcomb. Their lower canine is incisiform. They feed on fruit and small insects.

Organisational Characteristics of animals belonging to suborder 2 Tarsioidae.

- (i) Arboreal, nocturnal, insectivorous and solitary.
- (ii) Head with shortened snout.
- (iii) Eyes large, forward with good vision.
- (iv) Orbits communicate with temporal fossae with a wide fissure.
- (v) Tail is longer with a tuft at the tip and non-prehensile.
- (vi) Limbs are extremely long; hindlimbs longer than the forelimbs.
- (vii) Digits have adhesive pads and flat nail except the second and third toes which has claws.
- (viii) Cerebellum not covered by webbing.
- (ix) Dental formulae - $\frac{2033}{1133} = 34$.
- (x) Bicornuate uterus, clitoris transverse by uterine.
- (xi) Placental deciduate, metadeciduate.
- (xii) Tarsian spectrum with 3 species. Costed in Part II