Date 19.05.2020

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Question no. 31 :- Metatheria key character, Distribution, and Affinities ko classify karte hue archita varman kare?

Answer :- The subclass theria constitutes the "modern" mammals. This group includes three infraclasses, viz., the probably ancestral Jurassic Pantotheria (= Tuitaberculata), marsupial Metatheria and placental Eutheria, the most highly organised and advanced branch of Jurassic panto-theres and both diverged along their separate lines of evolution during early Cretaceous period.

In the upper Creta-ceous period, the marsupials were more numerous than the eutherians. It was possibly during Cretaceous that marsupials entered New Guinea, Australia and adjacent islands, which were isolated from Asia probably in the late Cretaceous. Here they were able to survive free from competition with eutherians except for bats and later rodent invaders.

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① Distribution :-

Almost entirely confined to the Australian region with the exception of the American opossums.

② Habits and Habitat :-

Marsupials are terrestrial and carnivorous (e.g., native-cats, tasmanian devil, marsupial wolf), terrestrial and herbivorous kang-aroos; arboreal and insectivorous Didelphys, Marmosa, Chironects, etc; arboreal phalangers or opos-sums and semi-arboreal phas-cogale and pouched rats and mice, and pouchless Jerboa-like marsupials and banded ant-eaters; burrowing desert marsupial mole and bandicoots; and flying and climbing phalangers.

③ External Features :-

Body is covered over with hairs, pinna (external ear) is well developed, but absent in moles. Tail is generally long and prehensile, and an important organ of balance in kangaroo rats and jumping mice. Mammary glands are modified

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sebaceous glands and have elevated nipples.

④ Exoskeleton :-

It includes ectodermal structures, the hairs derived from the malpighian layer of epidermis and claws. Skin also contains sweat gland, sebaceous glands and scent glands.

⑤ Body Cavity :-

Typical muscular diaphragm divides the body cavity into thorax and abdominal cavities.

⑥ Endoskeleton :-

(i) Skull :

Skull is diocndylic. Brain case small. Orbit and temporal fossa fully confluent and no posterbital bar. Bony palate is incomplete posteriorly. Jugal bone reaches back so as to participle in the formation of glenoid cavity for articulation of lower jow. lacrymal bone extends outside the orbit.

Tympanic bulla is absent. Tympanic, periotic and squamosal remain separate. Alisphenoid assists in forming the bulla.

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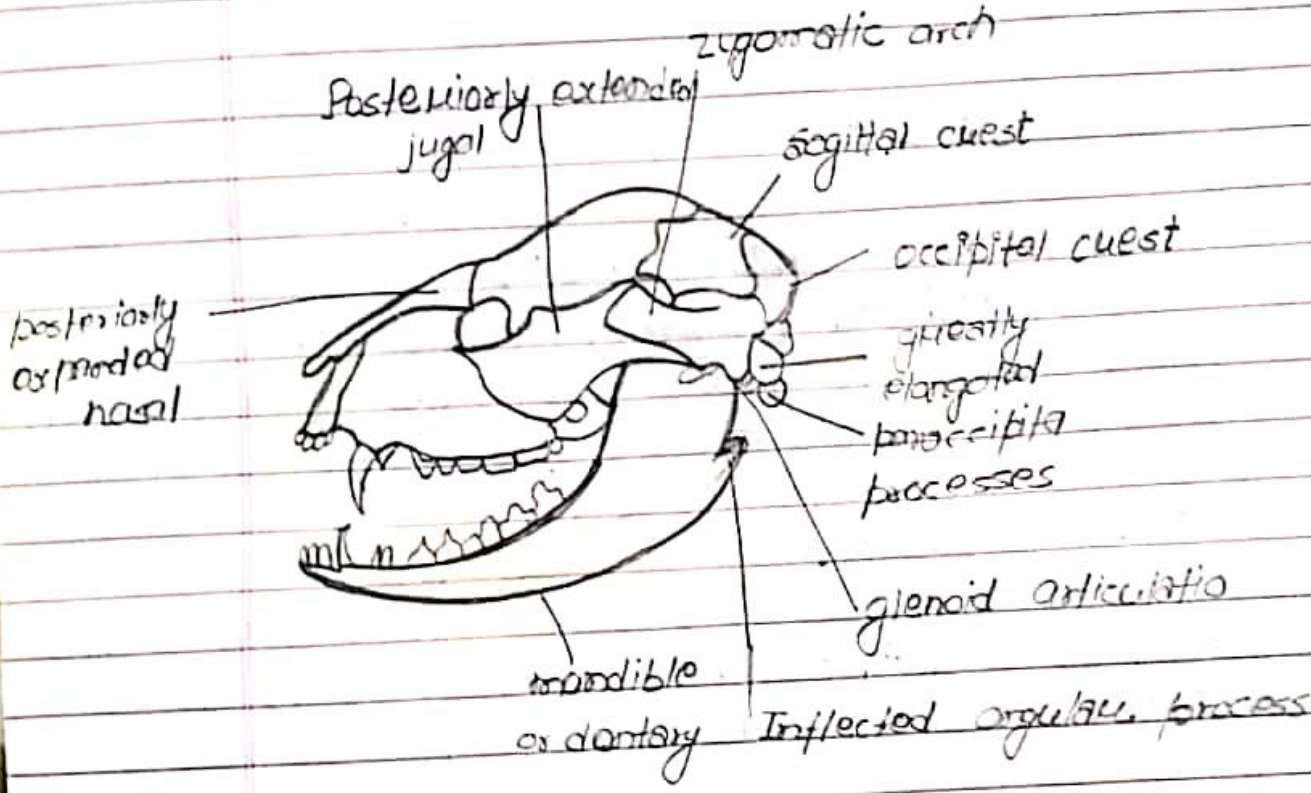
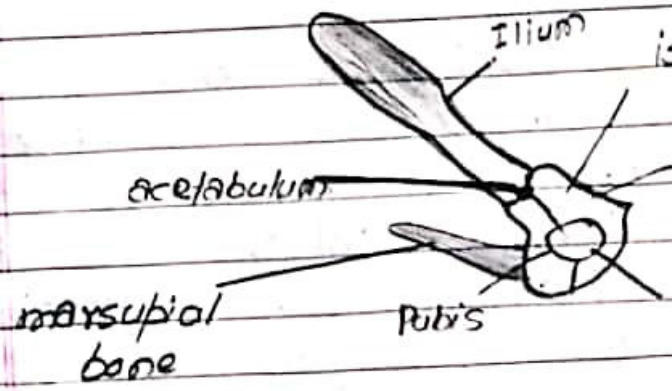


[A]



[B]

Opposum. A - skull and mandible in lateral view;
B - Pelvic girdle showing marsupial bone.

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• Nervous System :-

Brain is relatively smaller. Olfactory bulbs large. Corpus callosum is absent and anterior commisure connects the two corpora striata. Cerebral hemisphere surface is convoluted. Cerebellum is small and simple. Cochlea of Internal ear is spirally coiled.