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8 Pages



तारीख

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नाम

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कक्षा

CLASS..Bsc. zoology. (hons)

सेमेस्टर

SEMESTER.....4th.....

रोल नं.

ROLL NO.22/22006.....

विषय

SUBJECT Comparative anatomy

पेपर नं.

PAPER NO.

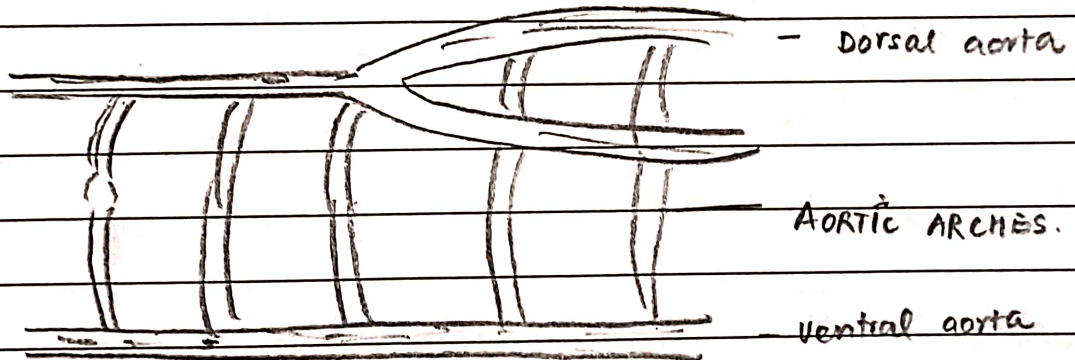
*अतिरिक्त प्रयुक्त उत्तर पुस्तिकाओं की संख्या

No. of continuation books used.....

$$\frac{13-2}{16} \text{ Apr} = \frac{7}{8}$$

Q1. Describe the evolution of aortic arches in vertebrates with suitable diagram.

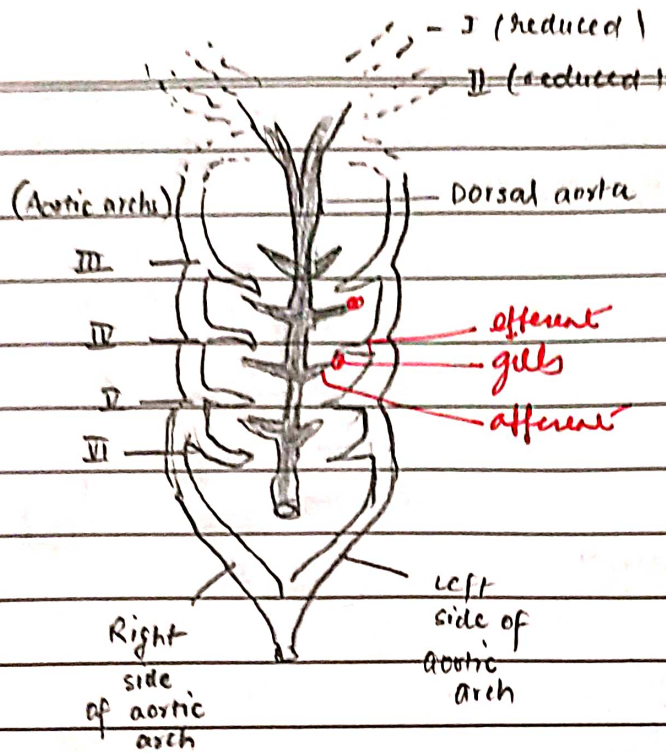
Sol:



A primitive and base model have 6 aortic arches.

As Aortic arches are the arches which connect dorsal aorta to ventral aorta as shown in diagram.

- As we move from Pisces (Teleost) to mammalia, there is modification or evolution seen in development of aortic arches.



Aortic arch in Teleosts

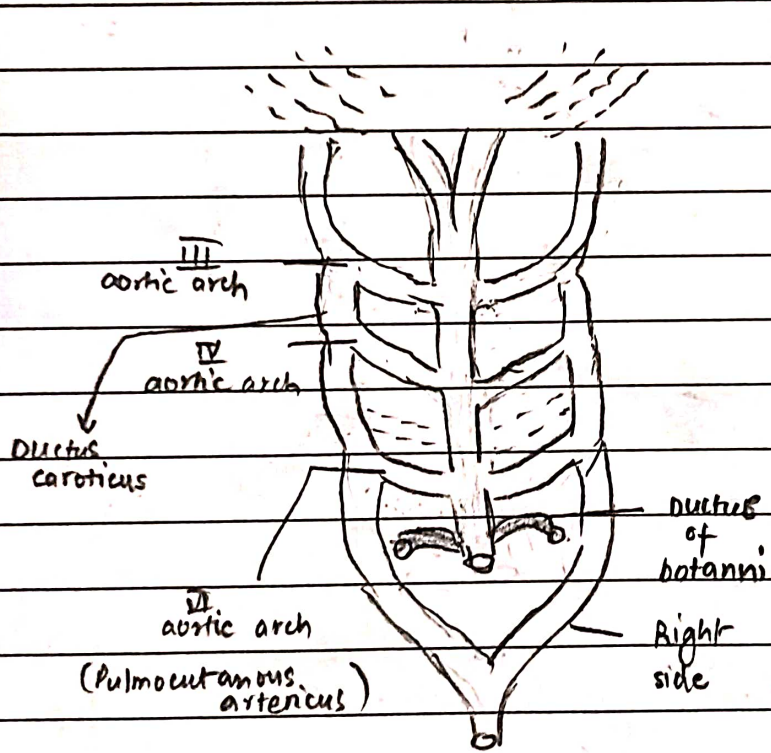
Teleosts are bony fishes.

For eg: CAT fish.

It has 4 pair of aortic arches. (as shown in diagram)

— III, IV, V, VI aortic arch is present.

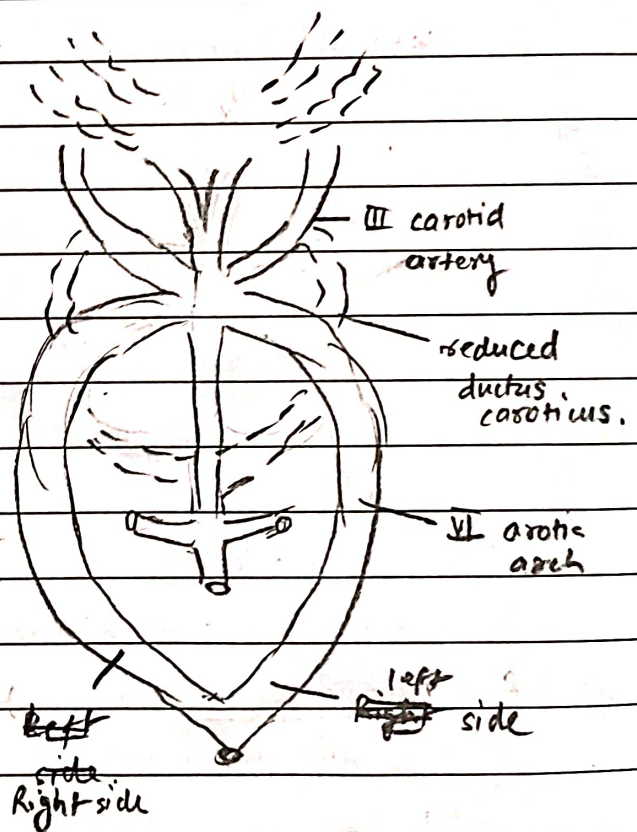
Aortic arch in Teleosts



(Urodele)



4 aortic arches present
III, IV, V and VI

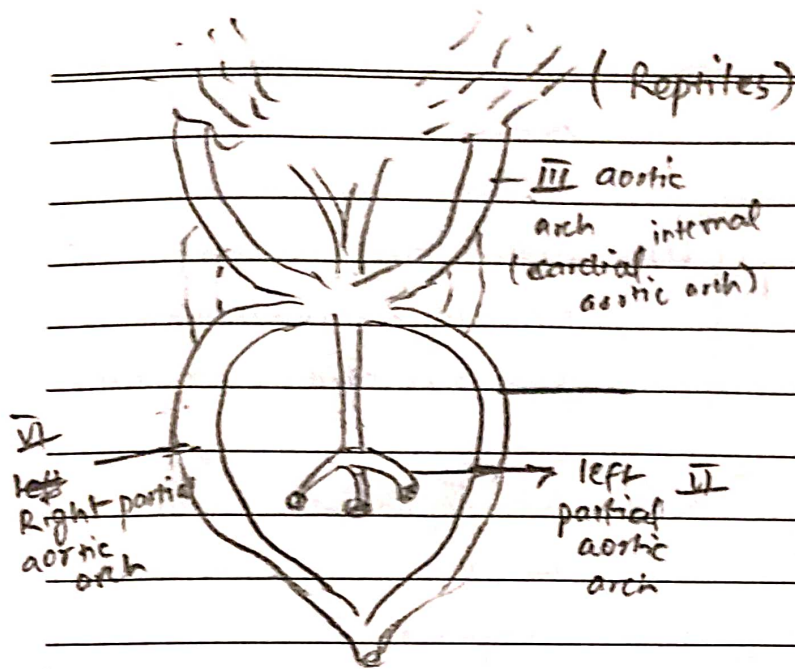


(Anurans)



(Amphibians)

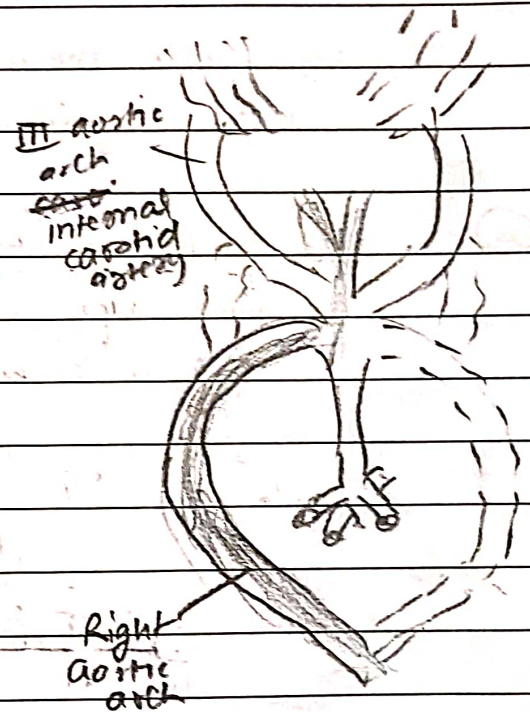
3 aortic arches present.
III, IV and VI



In Reptiles, aortic arch VI forms partial aortic arch on both side (left and right) side

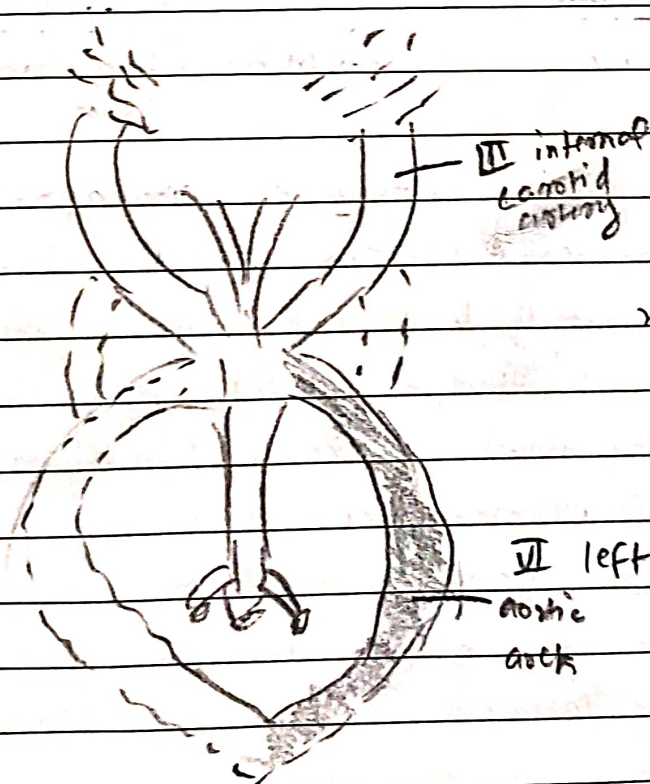
(Aves)

It is found in birds, the aortic arch (aorta) formed on the right side instead of left.



(mammals)

It is found in human beings, aortic arch formed from left side rather than right side.



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Ans2: ① True horns

① Horns are bony in structure in which ^{keratinized} sheath is present.

② Horns are used for food and some times defense purpose.

③ Eg: cattle, sheep etc.

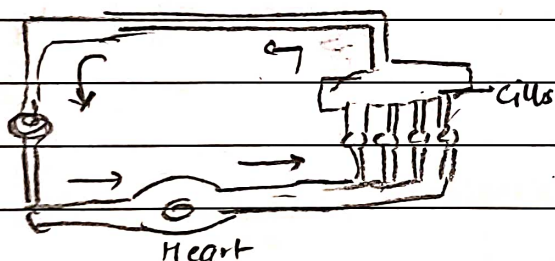
Antlers

① Antlers are modified structure, outgrowth of skin and hard in structure.

② Antlers basically used for defence purpose and competition.

③ Eg: Rinder etc.

③ single circulation: It is a type of circulation in which blood enter into the heart only once.
As in seen in Fishes.



- single type of circulation
- Low efficiency.
- Eg: Fishes. (having 2-chambered heart)
- Mixing of O_2 and deO_2 blood seen.

② Double circulation: It is a type of circulation in which blood enters into the heart twice.

Once deoxygenated blood enters into right side of heart and through left side pulmonary vein oxygenated blood enters.

Two circulation works:
① pulmonary circulation
② systemic circulation.

- High efficiency in circulation of blood.
- Eg: In mammals and higher vertebrates.

(continued →)

Ans 3:-

The epidermal glands in vertebrates.

① Mucous glands : found in some fishes and amphibians which secrete a substance called mucin.

② Poisonous glands : secrete toxin substance, which help in defence mechanism. Eg: Reptiles.

③ Femoral gland : Eg: Lizards. secrete pheromones.

④ Scent glands : Eg: Crocodiles and other reptiles. It is used for communication and marking territories purpose.

④ Uropygial glands : Eg: Birds (Aves). Present at the base of a tip. It is used in ~~the~~ helpful in flying purpose.

⑤ Sweat glands : Eg: Mammals (Human beings) which secrete sweat and other ions from the body as toxin waste.

⑥ Sebaceous glands : Found in mammals : It secrete a substance called sebum (oil in nature)

25/12/20

⑦ Mammary glands : Found in mammals. It is used in lactation purpose for lactating milk.

Ans 4:

① (a)

Preen glands

also called uropygial gland. Found

in aves (birds). Present at the base of the tail region.

Its function is ~~the~~ to help in flight.

(C)

Ductus caroticus:

Found in urodele (Amphibians)

It connects the III and IV aortic arch.

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Ans 2

⑤

Afferent
branchial
artery

They bring blood from
tissues to sinus venosus

efferent
branchial
artery

① They take blood
from ventricles to
aortic roots.

②

Contour feather

① Help in Flight of the birds

②

Light in weight

~~Heavy in~~ broad Rachis

and streamlined shape

help in flight purpose-

Down feather

① Found in Young ones.

②

It is waterproof.