

CC8- Comparative Anatomy of Vertebrates

Section A

Each question carries one mark

Fill in the blanks

1. First cranial nerve of vertebrate is called ____.
2. One half pelvic girdle is called as ____.
3. ____ is the structural and functional unit of kidney
4. ____ is the horny plate in the oral cavity of whales
5. Branched horn of antelope is called ____.
6. A pair of nerve bands present only in higher vertebrates connecting diencephalon with medulla oblongata and pons is called ____.
7. The dental formula for an adult human is ____.
8. Indian major carps have ____ type of scales.
9. Sharks have ____ type of scales.
10. *Anabas* has ____ type of scales
11. The bone of birds is called as ____.
12. The horn of a rhinoceros is a modified ____.
13. The tusk of an elephant is ____ teeth.
14. The tusk of wild boar is ____ teeth.
15. Swim bladder is found in ____.
16. Human has a tidal volume ____ ml.
17. Ptyalin acts at pH ____.
18. One ovary is present in ____ class of Animalia.
19. Ruminant stomach have ____ inside for digestion of cellulose.
20. Rabbits have ____ type of uteri.
21. Kangaroos have ____ type of uteri.
22. Cats and horses have ____ type of uteri.
23. Dogs have ____ type of uteri.
24. Monkeys have ____ type of uteri.
25. Human beings have ____ type of uteri.
26. Ileum is present in ____ of mammal.
27. Ilium is present in ____ of mammal.
28. ____ hormone acts a hunger suppressant.
29. Large intestine is also called as ____.
30. Digestive system originates from ____.
31. Teleosts have ____ pairs of aortic arches.
32. Left systemic arches are absent in ____.
33. The number of arches in adult mammal is ____.
34. The urinogenital system originates from ____.
35. Bowman's capsule and glomerulus together forms ____.
36. Malpighian bpdy is otherwise known as ____.

37. Archinephrous kidney is found in ____.
38. Embryos of all vertebrates have ____ type of kidneys.
39. Amphibians and Pisces have ____ type of kidneys.
40. Adult amniotes have ____ type of kidneys
41. The most important trend in evolution of vertebrate nervous systems is the increase in size, configuration, and functional capacity of the brain, a process called ____.
42. Annelids have a bilobed ____ ganglion acting as brain.
43. The longest nerve cells in animal kingdom are present in the ____.
44. Radial nerve ring is present in ____.
45. ____ of brain acts the thermoregulator.
46. A thick band of axons known as the ____ enables the right and left cerebral cortices to communicate.
47. Anterior part of epithalamus contains a glandular area called ____ which secretes cerebro-spinal fluid.
48. The brainstem consists of the midbrain, ____ and the ____.
49. Lateral ventricles, or Telocoel or I and II ventricles are connected together with ____.
50. The difference in function between the right and left hemispheres is called ____.
51. Neurosecretory cells located in the ____ produce several neurohormones.
52. The caudate nucleus and putamen are together known as the ____.
53. The caudate nucleus, putamen, and globus pallidus together form the ____.
54. ____ is responsible for dopamine production in the brain, and therefore plays a vital role in reward and addiction.
55. Third ventricle is connected with fourth ventricle of brain by ____.
56. Nervous system originates from ____.
57. 10th cranial nerve is called as ____.

Section- B

Each question carries 1.5 mark (to be answered within 30 words)

Give the location and function of the following:

1. Acetabulum
2. ampulla of ear
3. Brunner's glands
4. cerebellum
5. cerebrum
6. Chief cells
7. Clara cells
8. Epithalamus
9. *Fovea centralis*
10. Gill raker
11. hypothalamus
12. Islet of Langerhans
13. limbic system
14. Macula

15. Medulla oblongata
16. Meibomian glands
17. Mesangial cells
18. Parietal cell
19. Pecten
20. Tectum
21. Thalamus
22. Vibrissae
23. *Vitro dentinae*
24. Incus
25. Statocyst
26. Hippocampus
27. *Fossa ovalis*
28. Habenular process
29. Pons
30. Foramen of Monro
31. Foramen ovale
32. Abducens
33. Proprioceptors

Define in one to two lines:

1. Proprioceptors
2. *Arbor vitae*
3. Jacobson's organ
4. Sudorific Glands
5. Diastema
6. Axial skeleton
7. Mesobronchus
8. *Ductus caroticus*
9. Dermatocranium
10. Coronary Sinus
11. Anatomic Dead Space
12. Peyer's Patches
13. T_m (Transport Maximum)
14. Gaafian follicle

Section- C

Each question carries 2.5 mark (to be answered within 75 words)

Write short notes

1. Types of chemoreceptors (only name with one line definition) .
2. Jaw suspensorium in vertebrates
3. Ruminant stomach
4. Dentition in mammals
5. Visceral arches
6. Scales of fishes
7. Swim bladder

Differentiate between the following

1. anatomy in the brain of a frog and a brain of a mammal (any four)
2. Placoid and ctenoid scales
3. Crop and Gizzard
4. Holobranch and Hemibranch gills
5. Larynx and Syrinx
6. True Horn and Antlers
7. Heterocoelous and Procoelous vertebrae
8. Contour feathers and Down feathers
9. Bicornuate and Bipartite uteri
10. Acetabulum and Glenoid cavity
11. Rod and cone cells
12. Physostomous and physoclistous air bladder
13. Bronchus and Bronchiole
14. Cortical Nephron and Juxtamedullary Nephron
15. Axial and appendicular skeleton
16. Chemo and mechano receptors
17. Spinal and cranial nerves

Draw the neat labelled diagram

1. Organ of Corti.
2. Mammalian heart
3. Lateral line system of fish
4. Human eye

Section- D

Each question carries 6 mark (to be answered within 500 words)

1. Compare the Aortic arches in fishes, amphibians and mammals.
2. Describe the accessory respiratory organs in fishes.
3. Draw a well labeled diagram of the mammalian integument and give an account of its epidermal derivatives.
4. Classify the receptors based on their function.
5. Discuss the succession of kidney in vertebrates with labelled diagrams.
6. Describe the evolution of male and female urinogenital system in reptiles and mammals.
7. Draw-well-labeled-diagram-of Brain of bird.
8. Illustrate diagrammatically the histological details of the stomach in relation to its functional aspects.
9. Explain the structure of gills of cartilaginous and bony fishes.
10. Tabulate the fate of visceral arches in vertebrates.
11. Discuss the details of succession of kidneys in vertebrates
12. Discuss different types of jaw suspensorium in gnathostomes
13. Compare the brain of mammal with that of a reptile.
14. Explain different types of integumentary glands in chordates.
15. Depict the life cycle of RBC with the help of a flowchart.