

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**Question Bank for Mar 2022 ( Summer) Examination**  
**Course Name -B.Sc. Part-III (Semester-V)**  
**Subject-ZOOLOGY PAPER-IX**  
**Comparative Anatomy of Vertebrates (DSE- E-29)**  
**Subject Code - 79693**

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**Q. Select the correct answer from each of the following & rewrite complete sentence.**

1. ....is a connective tissue of nervous system.  
a. Adipose b. Areolar c. Neuroglia d. Cartilage
  
2. Central nervous system in vertebrates is derived from.....  
a. Basal plate b. Blastopore c. Neural plate d. None.
  
3. Nissl's granules are made up of.....  
a. Nucleoprotein b. Thymine c. DNA d. RNA
  
4. Bipolar neurons are found in.....  
a. Cornea b. Conjunctiva c. Lens d. Retina
  
5. Function of restiform bodies in elasmobranchs is.....  
a. Swimming b. Steering c. Maintenance of equilibrium d. Sound production
  
6. Pecten is found in the eye of.....  
a. Fish b. Bird c. Lizard d. Frog
  
7. In vertebrates taste buds are present on .....  
a. Palate b. Tongue c. Pharynx d. All of the above

- 8..... are connected to the somatic sensory nerves.
- a. Proprioceptor b. Thermoreceptor c. Exteroceptor d. Interoceptor
9. The vertebrate animal has maximum ..... of aortic arches
- a) 4 pairs b) 5 pairs c) 6 pairs d) 7 pairs
10. The connection between third and fourth aortic arch is known as.....
- a) ductus caroticus b) ductus arteriosus c) ductus botelli d) pulmonary
11. Connection between sixth aortic arch and dorsal aorta is known as.....
- a) ductus caroticus b) ductus arteriosus c) ductus botelli d) pulmonary
12. Two systemic arches join together and forms dorsal aorta in .....
- a) birds & mammals b) mammals & reptiles c) amphibian & reptile d) birds & amphibian
13. Functional unit of kidney is.....
- a) hilum b) neuron c) nephron d) medulla
14. The kidney of adult elasmobranch fish such as scoliodon is of .... Type
- a) pronephrous b) metanephrous c) ophisthonephrous d) archinephros
15. The venous heart is ..... chambered
- a) two b) three c) four d) partially four
16. The heart of ..... is termed as completely four chambered heart
- a) lizard b) cobra c) sea horse d) rat
17. The valve located between the left auricle and left ventricle is called ....
- a) mitral valve b) eustachian c) thebisius d) tricuspid valve
18. The valve located between the right auricle and right ventricle is called ....
- a) mitral valve b) eustachian c) thebisius d) tricuspid valve
19. The crop present in birds is a modification of \_\_\_\_\_
- a. Pharynx b. Oesophagus c. Stomach d. Intestine

20. In birds gizzard is used for \_\_\_\_\_  
a. Chewing food      b. grinding food      c. mixing food      d. digesting food
21. The presence of spiral valve in the intestine is a characteristic of \_\_\_\_\_  
a. Labeo      b. Shark      c. Flatfish      d. Sea horse
22. The duct of sublingual gland is known as \_\_\_\_\_  
a. Bartholins duct      b. Wilson's duct  
c. Wharton's duct      d. Stensen's duct
23. True muscular lips are found in \_\_\_\_\_  
a. cyclostomes      b. fishes      c. amphibians      d. mammals
24. The part of archenteron connected to yolk sac  
a. primitive gut      b. foregut      c. midgut      d. hind gut
25. Oesophagus in adult vertebrates is derived from \_\_\_\_\_  
a. primitive gut      b. foregut      c. midgut      d. hind gut
26. In frog tongue is \_\_\_\_\_  
a. primary tongue      b. definite tongue      c. horny tongue      d. immobile tongue
27. The largest oral glands are found in \_\_\_\_\_  
a. mammals      b. birds      c. reptiles      d. amphibians
28. Largest oesophagus is found in \_\_\_\_\_  
a. dog      b. giraffe      c. frog      d. Sparrow
29. Epithelial lining in a true stomach contains \_\_\_\_\_  
a. salivary glands      b. mucous glands      c. goblet cells      d. gastric glands
30. In ruminants true stomach is represented by \_\_\_\_\_  
a. abomasum      b. reticulum      c. rumen      d. omasum
31. Comparatively longest intestine is found in \_\_\_\_\_  
a. herbivorous      b. carnivorous      c. omnivorous      d. insectivorous
32. The salivary glands are absent in  
a. Fishes and amphibians      b. Birds and mammals  
c. Mammals and Pisces      d. Reptiles and mammals
33. The tongue of frog is \_\_\_\_\_  
a. short protrusible and attached at the front end  
b. short protrucible and attached at the distal end  
c. Long non protrusible and attached at the front end  
d. Long protrusible and attached at the front end
34. Stomach in frog is attached to the dorsal body wall by means of a mesentary called \_\_\_\_\_  
a. oxygaster      b. Endogaster      c. mesogaster      d. megagaster
35. Liver of dogfish is \_\_\_\_\_  
a. single lobed      b. bilobed      c. trilobed      d. four lobed

36. Adams apple is cartilage of \_\_\_\_\_  
 a. Thyroid    b. Nose    c. Ear    d. Pitutary
37. The dome shaped diaphragm is present in the abdomen of \_\_\_\_\_  
 a. Reptiles    b. Birds    c. Mammals    d. Amphibians
38. The duct of Parotid gland is known as \_\_\_\_\_  
 a. Bartholins duct    b. Wilson's duct  
 c. Wharton's duct    d. Stensen's duct
39. The mammalian liver (Rabbit) is \_\_\_\_\_  
 a. Two    b. Three    c. Four    d. Five
40. The opening into the cardiac stomach is guarded by \_\_\_\_\_  
 a. blind sac    b. sphincter valve    c. scroll valve    d. oesophageal valve
41. The trachea is absent in \_\_\_\_\_  
 a. Calotes    b. Pigeon    c. Frog    d. Rat
42. Gills and lungs of vertebrates are the derivative of embryonic \_\_\_\_\_  
 a. Pharynx    b. archenteron    c. heart    d. kidney
43. Complete Gill is called \_\_\_\_\_  
 a. Demi branch    b. holobranch    c. hemibranch    d. pseudo branch
44. In bony fishes operculum arises from \_\_\_\_\_  
 a. hyo-mandibular    b. mandible    c. spenethemod    d. hyoid arch
45. Lungs of reptiles are located in \_\_\_\_\_  
 a. neck    b. thorax    c. abdomen    d. tail
46. Respiratory organ of embryonic vertebrates \_\_\_\_\_  
 a. yolk sac    b. amnion    c. chorion    d. egg membrane
47. During submergence in aquatic turtles the accessory respiratory organ is \_\_\_\_\_  
 a. skin    b. gill    c. cloacal bladder    d. air sacs
48. Adam's Apple is a cartilage of \_\_\_\_\_  
 a. trachea    b. nose    c. pitutary    d. ear
49. In birds sound is produced by \_\_\_\_\_  
 a. air sacs    b. trachea    c. larynx    d. syrinx
50. In Rabbit right lung has \_\_\_\_\_ lobes  
 a. 3    b. 4    c. 5    d. 6
51. Primary Fuction of Sweat gland is.....  
 a) Thermoregulation    b) Osmoregulation  
 c) Excretion    d) None of the Above

52. Function of Sebaceous gland is .....

- a) Moist the skin
- b) Lubricates
- c) Protect the skin
- d) All of the Above

53. Exoskeleton in.....is made up of Scales.

- a) Birds
- b) Mammals
- c) Reptiles
- d) None of these

54. Epidermis is made up of four layers in.....

- a) Pisces
- b) Amphibia
- c) Reptiles
- d) Mammals

55. .... is the first vertebra of Cervical region.

- a) Atlas
- b) Axis
- c) Typical
- d) Free thoracic vertebra

56. .... is the part of Appendicular Skeleton.

- a) Atlas
- b) Axis
- c) Typical
- d) Pectoral girdle

57. .... is the last vertebra of Caudal region.

- a) Pygostyle
- b) Atlas
- c) Axis
- d) Thoracic

58. Acetabulum cavity is present in.....

- a) Pelvic girdle
- b) Pectoral girdle
- c) Pygostyle
- d) Typical vertebra

59. Mucous glands, Poison glands, Femoral glands, Sweat glands, Sebaceous glands are the examples of.....

- a) Epidermal glands
- b) Dermal glands
- c) Exocrine gland
- d) Endocrine gland

60. ....are the dermal derivatives of the integument.

- a) Glands            b) Scales            c) Both i&ii        d) None of these

## **Q. 2 Long Answer Questions**

1. Describe the brain of frog and compare it with brain of mammal.
2. Give a comparative account of the brain of reptile and mammal.
3. Describe the structure of eye and explain the process of focussing mechanism in vertebrates.
4. Describe the structure of ear in vertebrates.
5. Describe three chambered heart and compare it with completely four chambered heart
6. Compare the structure of heart of fishes with the structure of heart of amphibian
7. Describe heart of amphibian and compare it with heart of mammals
8. Trace the evolution of heart in vertebrates
9. Describe evolution of kidney in vertebrates
10. Describe evolution of kidney in unamniotes like fishes, amphibians and reptiles
11. Explain the evolution of aortic arches in vertebrate animals
12. Describe in details hard epidermal derivatives of Integument
13. Give Comparative account on Pectoral girdle of Amphibians & Mammals
14. Describe the hard dermal derivatives of Integument
15. Describe soft derivatives of Integument

### **Q.3. Short Notes**

1. Skin of Reptiles
2. Pelvic girdle of Birds
3. Mammalian Skull
4. Lower limbs in Mammals
5. Feathers in Birds
6. Horns in Mammals
7. Pectoral girdle of Mammals
8. Fore-limb bones of Amphibia
9. Aortic arches in amphibian
10. Aortic arches in reptiles
11. Aortic arches in mammals
12. Metanephric Kidney
13. Enumerate differences between heart of fish and heart of bird
14. Differences between heart of amphibian and heart of reptile
15. Basic plan of portal system in vertebrates
16. Describe renal portal system of frog
17. Describe in brief structure and function of kidney
18. Explain in detail structural details of four chambered heart
19. Conduction of nerve impulse
20. Synapse
21. Pineal eye
22. Autonomous nervous system
23. Taste buds
24. Chemoreceptors

25. Organ of Jacobson
26. Interoreceptor
27. Crop of aves
28. Proventriculus and Ventriculus
29. Small intestine of mammals
30. Cloaca in reptiles