

CHORDATA

Multiple-Choice Questions

1. *Most important feature of chordates is the presence of:*
 - a) Notochord
 - b) Coelom
 - c) Vertebral column
 - d) Post-anal tail
2. *Notochord is made up of:*
 - a) Bone
 - b) Cartilage
 - c) Vacuolated cells
 - d) Muscle fibres
3. *Which one of the following is an incorrect statement regarding chordates?*
 - a) Chordates have notochord
 - b) Chordates possess dorsal tubular nerve cord
 - c) Chordates possess ventral nerve cord
 - d) Chordates have pharyngeal gill slits
4. *An example of a typical chordate is:*
 - a) Herdmania
 - b) Amphioxus
 - c) Balanoglossus
 - d) Salpa
5. *In which one of the following, is notochord present in the tail region?*
 - a) Amphioxus
 - b) Petromyzon
 - c) Herdmania
 - d) Balanglossus



6. *Notochord is located in the anterior part of the body in:*
- a) Cephalochordates
 - b) Hemichordates
 - c) Urochordates
 - d) Cyclostomata
7. *All chordate characters are present in the larva but are absent in the adult of:*
- a) Herdmania
 - b) Petromyzon.
 - c) Amphioxus
 - d) Oikopleura
8. *Which one of the following retains larval characters throughout life?*
- a) Myxine
 - b) Oikopleura
 - c) Salpa
 - d) Herdmania
9. *Retrogressive metamorphosis is shown by:*
- a) Vertebrates
 - b) Cephalochordates
 - c) Hemichordates
 - d) Urochordates
10. *Which one of the following is applicable to Chordates?*
- a) Mammary glands, hair and gill slits
 - b) Vertebral column, scales and dorsal tubular nerve cord
 - c) Notochord, dorsal tubular nerve cord and pharyngeal gill slits
 - d) Notochord, vertebral column and pharyngeal gill slits
11. *Vertebral column is derived from:*
- a) Ventral nerve cord
 - b) Dorsal tubular nerve cord



- c) Notochord
 - d) Pharyngeal gill slits
12. *Which one of the following structures is present in all adult vertebrates?*
- a) Pharyngeal gill slits
 - b) Notochord
 - c) Dorsal tubular nerve cord
 - d) All
13. Vertebrates possess:
- a) Notochord
 - b) Well-developed skull
 - c) Exoskeleton
 - d) Two pairs of appendages
14. Which one of the following is an incorrect statement?
- a) All vertebrates are chordates
 - b) All chordates are vertebrates
 - c) Amphioxus is a typical chordate
 - d) All vertebrates have dorsal tubular nerve cord
15. All protochordates are:
- a) Terrestrial
 - b) Freshwater
 - c) Marine
 - d) Amphibious
16. *Which one of the following is applicable to Herdmania?*
- a) Cephalochordata
 - b) Urochordata
 - c) Agnatha
 - d) Gnathostomata
17. *Agnatha includes:*

- a) All protochordates
 - b) Cyclostomes
 - c) Cyclostomes and amphibian
 - d) Cyclostomes and pisces
18. *Which one of the following is different?*
- a) Humans
 - b) Bats
 - c) Scoliodon
 - d) Myxine
19. *In urochordates, the basic chordate characters are:*
- a) Seen throughout life
 - b) Seen only in adult
 - c) Seen only in larva
 - d) Absent
20. *The circulatory system of Amphioxus is unique because:*
- a) Blood corpuscles are absent
 - b) Blood is colourless
 - c) Heart is absent
 - d) All
21. *What is incorrect about chordates?*
- a) Bilateral symmetry
 - b) Segmented body with segmental muscles
 - c) Single dorsal and hollow nerve cord
 - d) None
22. *The pharynx of lancelet bears:*
- a) Gill slits
 - b) An endostyle
 - c) An atrium
 - d) All



23. Consider the following statements:

- (A) Chordates possess pharyngeal gill slits but invertebrates lack pharyngeal gill slits
- (B) In vertebrates, blood flows anteriorly in the dorsal blood vessel while posteriorly in invertebrates
- (C) In vertebrates, blastopore develops in the anus while in invertebrates, blastopore becomes mouth
- (D) In both invertebrates and vertebrates, the anus is located in the posterior part of the body

The incorrect statements are:

- a) A and B
 - b) Band C
 - c) Band D
 - d) None
24. *Ascidacea, larvacea and thaliacea can be differentiated on the basis of:*
- a) Solitary or colonial habit
 - b) Number of pharyngeal gill slits
 - c) Nature of metamorphosis and organisation of tunic
 - d) All

25. Consider the following statements:

- (A) Animals having notochord are called chordates
- (B) Notochord is a rod-like structure
- (C) Notochord lies dorsal to the gut but ventral to the central nervous system
- (D) Notochord acts as support during locomotion

The correct statements are:

- a) All
 - b) B, C and D
 - c) A, Band D
 - d) AandD
26. Which one of the following is not an ascidicean?
- a) Herdmania

- b) Ciona
- c) Pyrosoma
- d) Molgula

27. Match column I with column II and select the correct answer using answer codes:

Column I	Column II
(A) Pit of Hatschek	1. Pyrosoma
(B) Neural gland	2. Doliolum
(C) Alternation of generation	3. Amphioxus
(D) Larval stage is lacking	4. Herdmania

Answer codes:

	A	B	C	D
a)	3	4	2	1
b)	4	3	1	2
c)	2	4	1	3
d)	3	4	1	2

28. Ascidiceans lack:

- a) Liver
- b) Endostyle
- c) Typhlosole
- d) Pyloric gland

29. Invertebrate chordate is applicable to:

- a) Cephalochordates
- b) Hemichordates
- c) Urochordates
- d) All

30. Which one of the following is lacking in hagfishes?

- a) Pineal eye
- b) Urogenital sinus
- c) Choroid plexus

- d) All
31. Thread cells are found in:
- a) Petromyzon
 - b) Myxine
 - c) Oikopleura
 - d) Pyrosoma
32. *Cranial nerves lacking in Myxine are:*
- a) Oculomotor, trochlear and abducens
 - b) Oculomotor, glossopharyngeal and vagus
 - c) Olfactory, trochlear and abducens
 - d) Trochlear, abducens and facial
33. *Echinoderms differ from chordates in having:*
- a) Radial symmetry
 - b) Water vascular system
 - c) Skeletons made up of calcite
 - d) All
34. *In tunicates, all organs are enclosed in a membrane, except:*
- a) Heart
 - b) Gonads
 - c) Pharynx
 - d) All
35. *The digestive system of agnatha lacks:*
- a) Mouth
 - b) Pharynx
 - c) Stomach
 - d) Intestine
36. *Which one of the following is a neotenous form?*
- a) Oikopleura
 - b) Appendicularia



- c) Kowaleviska
 - d) All
37. *Two sense organs are present in the larva of:*
- a) Botryllus
 - b) Herdmania
 - c) Ciona
 - d) Styela
38. *Tunicin is lacking in:*
- a) Oikopleura
 - b) Salpa
 - c) Ciona
 - d) Botryllus
39. *The body of Petromyzon is covered with:*
- a) Placoid scales
 - b) Cycloid scales
 - c) Ctenoid scales
 - d) Scales are absent
40. *Gills are pouch-like in:*
- a) Dipnoi
 - b) Cyclostomes
 - c) Cartilaginous fishes
 - d) Bony fishes
41. *Which one of the following is incorrect about cyclostomes?*
- a) Median fin is present
 - b) Respiratory organs consist of gill pouches
 - c) Conus arteriosus and renal portal system are present
 - d) Gonad is unpaired and is devoid of gonoduct
42. *Larva is freshwater while adult is marine in:*
- a) Herdmania



- b) Oikoplura
 - c) Lamprey
 - d) Dipnoi
43. *The larva of Petromyzon is:*
- a) Tornaria
 - b) Glochidium
 - c) Axolotl
 - d) Ammocoetus
44. *Petromyzon is:*
- a) Anadromous
 - b) Catadromous
 - c) Both
 - d) None
45. *Branchial basket is found in:*
- a) Amphioxus
 - b) Balanoglossus
 - c) Petromyzon
 - d) None
46. *Cyclostomes are:*
- a) Degenerated descendants of some forms of ostracoderms
 - b) Degenerated descendants of urochordates
 - c) Descendants of cephalochordates
 - d) Descendents of Echinoderms
47. *The number of nostrils in Petromyzon is:*
- a) One
 - b) Two
 - c) Four
 - d) No nostril
48. *Which one of the following leads an ectoparasitic life?*

- a) Herdmania
 - b) Petromyzon
 - c) Dipnoi
 - d) Dogfish
49. *Vertebrates have:*
- a) Well-developed cranium
 - b) Vertebral column
 - c) Special sense organs
 - d) All
50. *Ostracodermi is:*
- a) An extinct primitive class of vertebrates
 - b) A living class of primitive vertebrates
 - c) A primitive pisces
 - d) A jawless group of vertebrates
51. *Chordates with a backbone are called:*
- a) Agnatha
 - b) Gnathostomata
 - c) Protochordates
 - d) Vertebrates
52. *Amniota includes:*
- a) Pisces and amphibian
 - b) Reptiles, birds and mammals
 - c) Amphibia and reptilian
 - d) Birds and mammals
53. *Number of cranial nerves in amniotes is:*
- a) 8 pairs
 - b) 10 pairs
 - c) 12 pairs
 - d) 14 pairs



54. *Number of cranial nerves in anamniotes is:*
- a) 5 pairs
 - b) 7 pairs
 - c) 10 pairs
 - d) 12 pairs
55. *Cold-blooded groups of vertebrates are:*
- a) Pisces and amphibian
 - b) Pisces, amphibians and reptiles
 - c) Reptiles, birds and mammalian
 - d) Reptiles and birds
56. *Which one of the following is a cold-blooded animal?*
- a) Lizard
 - b) Parrot
 - c) Human being
 - d) Rabbit
57. *Which one of the following is different?*
- a) Frog, snake and lizard
 - b) Scoliodon, rohu and Ichthyophis
 - c) Pigeon, cow and bat
 - d) Snake, crocodile and toad
58. *In which one of the following does the body temperature remain constant?*
- a) Crocodile
 - b) Frog
 - c) Rohu
 - d) Bat
59. *Agnathans are animals:*
- a) With jaws
 - b) Without jaws
 - c) Without well-organised organs



- d) Without teeth
60. Specialised heart is absent in:
- Amphioxus
 - Scoliodon
 - Snakes
 - Ichthyophis
61. The connecting link between Echinoderms and Chordates is:
- Oikopleura
 - Archaeopteryx
 - Balanoglossus
 - Antedon
62. The group that lacks flying and gliding animals is:
- Cyclostomes
 - Pisces
 - Reptiles
 - Mammals
63. Match column I with column II and select the correct answer using answer codes:
- | Column I | Column II |
|-----------------------|--------------------------------------|
| (A) Atrium is present | 1. Larva of Herdmania |
| (B) Bioluminescent | 2. Amphioxus |
| (C) Adhesive papillae | 3. Pyrosoma |
| (D) Wheel organ | 4. Urochordates and cephalochordates |

Answer codes:

	A	B	C	D
a)	2	3	1	4
b)	2	1	2	4
c)	3	4	1	2
d)	4	3	1	2



64. *What is incorrect about thaliaeca?*
- a) Neotenous forms
 - b) Adults are devoid of notochord and tail
 - c) Distinct alternation of generation
 - d) Tunic bears muscle bands
65. *Ascidians lack:*
- a) Red blood corpuscles
 - b) Capillaries
 - c) Ciliated wall of alimentary canal
 - d) All
66. *In which one of the following animals does the direction of flow of blood in the heart change periodically?*
- a) Myxine
 - b) Ascidia
 - c) Branchiostoma
 - d) Asymmetron
67. *Consider the following statements with reference to Branchiostoma:*
- (A) Blood lacks cells*
- (B) Blood is colourless*
- (C) Respiratory pigment is absent*
- (D) Blood vessels are without any lining except the dorsal aorta*
- The incorrect statements are:
- a) A and B
 - b) Band C
 - c) Band D
 - d) None
68. *In which one of the following is the heart lacking?*
- a) Appendicularia
 - b) Kowalevskia

- c) Oikopleura
 - d) Fritillaria
69. *Consider the following statements with reference to Amphioxus:*
- (A) *Transparent free-swimming oceanic animals with permanent tail*
 - (B) *Atrial cavity is present*
 - (C) *Budding takes place*
 - (D) *Development without metamorphosis*
- The correct statements are:
- a) All
 - b) A, Band C
 - c) Band D
 - d) a and D
70. *Amphioxus lacks:*
- a) Heart
 - b) Liver
 - c) Solenocytes
 - d) Atrium
71. *In which one of the following are amnion and allantois absent:*
- a) Amphibia
 - b) Reptiles
 - c) Birds
 - d) Mammals
72. *In vertebrates, the paired appendages are used for:*
- a) Swimming and walking
 - b) Running and flying
 - c) Grasping
 - d) All
73. *Which one of the following has a monocondylic skull?*
- a) Amphibia



- b) Reptilia
 - c) Mammalia
 - d) All
74. *Dicondylic skull is found in:*
- a) Amphibians and reptiles
 - b) Reptiles and birds
 - c) Birds and mammals
 - d) Amphibians and mammals
75. *Kidney of amniotes is:*
- a) Archinephrous
 - b) Mesonephrous
 - c) Pronephrous
 - d) Metanephrous
76. *Kidney of Petromyzon is:*
- a) Archinephrous
 - b) Pronephrous
 - c) Mesonephrous
 - d) Metanephrous
77. *In which one of the following is there no regulatory system for body temperature?*
- a) Reptiles, amphibians and pisces
 - b) Reptiles, birds and mammals
 - c) Amphibians, reptiles and mammals
 - d) Pisces and amphibians
78. *Which one of the following statements is not true about Petromyzon?*
- a) They are also known as lampreys.
 - b) They retain notochord throughout their lives.
 - c) They are jawless.
 - d) They possess bony skeleton.



79. *In which one of the following groups is notochord only present during embryonic development?*

- a) Cephalochordata
- b) Hemichordata
- c) Agnatha
- d) Gnathostomata

80. *Suctorial mouth is present in:*

- a) Amphioxus
- b) Petromyzon
- c) Flying fish
- d) Dipnoi

81. *In Myxine:*

- a) Buccal funnel is present
- b) Dorsal fin is present
- c) Pineal eye is present
- d) None

82. *A tailed larva is lacking in:*

- a) Pyrosoma
- b) Clavellina
- c) Doliolum
- d) Ascidia

83. *Which one of the following is not applicable to urochordates?*

- a) Ciliary feeders
- b) Vandocytes
- c) Closed blood vascular system
- d) Retrogressive metamorphosis

84. *Urochordates lack:*

- a) Cephalisation
- b) Appendages

- c) Segmentation
 - d) All
85. *In which one of the following is the heart absent, but the circulatory system present?*
- a) Doliolum
 - b) Herdmania
 - c) Amphioxus
 - d) None
86. *Adult Herdmania lacks:*
- a) Notochord
 - b) Dorsal tubular nerve cord
 - c) Tail
 - d) All
87. *Which one of the following is different?*
- a) Crayfish
 - b) Devil fish
 - c) Hagfish
 - d) Silverfish
88. *Metamerism is exhibited by:*
- a) Annelida
 - b) Arthropoda
 - c) Chordata
 - d) All
89. *Which one of the following is not applicable to Petromyzon?*
- a) Buccal funnel
 - b) Slime glands
 - c) Pancreas
 - d) Branchial basket
90. *Endostyle is lacking in:*
- a) Kowalevskia

- b) Appendicularia
 - c) Fritillaria
 - d) Oikopleura
91. *In which one of the following is the free-swimming period 90 to 180 seconds?*
- a) Molgula
 - b) Botryllus
 - c) Pelonaia
 - d) Clavellina
92. *Tunic is lacking in:*
- a) Doliolum
 - b) Pyrosoma
 - c) Botryllus
 - d) None
93. *The feeding current in Branchiostoma is:*
- a) Mouth ~ pharyngeal gill slits ~ pharynx ~ atrium ~ atriopore ~ exterior
 - b) Mouth ~ pharynx ~ atriopore ~ pharyngeal gill slits ~ atrium ~ exterior
 - c) Mouth ~ pharynx ~ pharyngeal gill slits ~ atrium ~ atriopore ~ exterior
 - d) Mouth ~ atrium ~ pharyngeal gill slits ~ pharynx ~ atriopore ~ exterior
94. *What is incorrect about Myxine?*
- a) Metamorphosis is absent
 - b) III-developed branchial basket
 - c) Only one semicircular is present
 - d) Dorsal and ventral roots of the spinal nerves remain separate.
95. *In lampreys, which of the following nerves are post cranial?*
- a) Oculomotor and trochlear
 - b) Trochlear and abducens
 - c) Trochlear and glossopharyngeal
 - d) Glossopharyngeal and vagus
96. *Which one of the following is not a hagfish?*



- a) Myxine
 - b) Lampetra
 - c) Eptatretus
 - d) Bdellostoma
97. *Which one of the following is not applicable to Amphioxus?*
- a) Enterocoelus coelom
 - b) Unisexual
 - c) Sexual dimorphism
 - d) Hepatic portal system
98. *Agnathans possess:*
- a) Hepatic portal system
 - b) Renal portal system
 - c) Conus arteriosus
 - d) All
99. *Gnathostomes have:*
- a) Jaws
 - b) Paired appendages
 - c) Skull
 - d) All
100. *What is incorrect about thaliacea?*
- a) Free-swimming tunicates
 - b) Caudal appendages are present in the adult
 - c) Mouth and atriopore are located on the opposite ends of the body
 - d) Life cycle involves alternation of generation
101. *Which one of the following is not applicable to Dolium?*
- a) Polymorphism
 - b) Alternation of generation
 - c) Cladophore
 - d) Viviparous



102. *The only animal with an exoskeleton that does not moult*
- a) Eptatretus
 - b) Tunicates
 - c) Cephalochordates
 - d) None
103. Which one of the following is lacking in urochordates but present in cephalocordates?
- a) Segmentation
 - b) Nephridia
 - c) Heart
 - d) All
104. *Consider the following statements about larvacea:*
- (A) Have a house they live in*
 - (B) House is regrown and shed regularly, generally in four hours or less*
 - (C) 4-16 houses are produced per day*
 - (D) One larvacean can remove 250, 000 phytoplankton daily*
- The incorrect statements are:
- a) All
 - b) B and C
 - c) B and D
 - d) None
105. *Atrium and atrial aperture are lacking in:*
- a) Ascidiacea
 - b) Larvacea
 - c) Thaliacea
 - d) cephalochordata
106. *What is incorrect about oozoid of Doliolum?*
- a) Barrel shaped
 - b) Gonads are present
 - c) Few large gill slits are present



- d) There are 9 muscle bands
107. *Which one of the following is viviparous?*
- a) Clavellina
 - b) Phrynosoma
 - c) Phyllobates
 - d) Chelone
108. *What is incorrect about ascidiacea?*
- a) Solitary or colonial
 - b) Heart can pump blood in two directions
 - c) Have the ability to regenerate the entire body from a fragment
 - d) Reproduction is only sexual
109. *Which one of the following is present only in Amphioxus and not in any other chordates?*
- a) Atriopore
 - b) Nephridium
 - c) Velum
 - d) None

True or False

1. Notochord is a solid structure.
2. All chordates are deuterostome.
3. Amphioxus is eaten by humans in some parts of the world.
4. Most chordates are vertebrates.
5. All tunicates are marines and filter-feeding animals.
6. Tunicates have myomeric segmentation.
7. Tunicates start their life cycle in a mobile larval stage.
8. Usually tunicates are hermaphrodites.

9. Chordates have an exoskeleton.
10. The smallest chordates, like some of the tunicates and gobioid fishes, mature at a length of about 1 cm.
11. Agnatha are the oldest known vertebrates.
12. In hagfishes, the circulatory system is closed.
13. Blood of hagfishes is isotonic to seawater.
14. Sea squirts are hermaphrodite and fertilisation is external.
15. Some thaliaceans are luminescent.
16. Clavellina lacks tadpole-like larval form.
17. Salpa shows alternation of generation.
18. In Salpa, muscle bands are in the form of complete rings.
19. A tailed larval stage is present in the life cycle of Doliolum.
20. Pyrosoma reproduces by budding.

