

AMPHIBIA

Multiple-Choice Questions

1. *Amphibians are animals which can live:*

- a) Only on land
- b) Only on water
- c) Both on land and water
- d) Estuarine water

2. *Amphibians originated during the:*

- a) Ordovician period of the Paleozoic era
- b) Devonian period of the Paleozoic era
- c) Carboniferous period of the Paleozoic era
- d) Mesozoic era

3. *A characteristic feature of Amphibians is:*

- a) Webbed limbs
- b) Presence of dermal scales on the skin
- c) Presence of glandular and moist skin which is without scales
- d) Presence of pentadactyl limbs

4. *Amphibians are:*

- a) Bilaterally symmetrical and cold-blooded agnatha
- b) Bilaterally symmetrical and warm-blooded
- c) Radially symmetrical and cold-blooded gnathostomes
- d) Bilaterally symmetrical and cold-blooded gnathostomes

5. *Internal scales are present in the members of:*

- a) Anura
- b) Urodela
- c) Apoda
- d) None



6. *Which one of the following is lacking in amphibians?*

- a) Head
- b) Neck
- c) Trunk
- d) tail

7. *Limbleless amphibians are:*

- a) Anura
- b) Urodela
- c) Apoda
- d) Urodela and apoda

8. *Amphibia is the:*

- a) Smallest class of vertebrata
- b) Largest class of vertebrata
- c) First group of vertebrata completely adapted for terrestrial life
- d) First group of anamniota

9. *Which one of the following is an amphibian?*

- a) Ichthyophis
- b) Hydrophis
- c) Horned toad
- d) All

10. *Tree frog is the common name of:*

- a) Hyla
- b) Proteus
- c) siren
- d) Ichthyophis

11. *Necturus is commonly known as:*

- a) Mud puppy
- b) Tree frog



- c) Congo eel
- d) Blindworm

12. *Rhacophorus* is commonly known as:

- a) Tree frog
- b) Congo eel
- c) Water dog
- d) Flying frog

13. *Limbless amphibians* belong to the order:

- a) Anura
- b) Urodela
- c) Gymnophiona
- d) Salientia

14. Which one of the following is a *limbless amphibian*?

- a) Necturus
- b) Proteus
- c) Ichthyophis
- d) Salamandra

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

Column I Column II

(a) *Liopelma* 1. No parental care

(b) *Xenopus* 2. Discontinuous distribution

(c) *Ascaphus* 3. Vocal sacs are lacking in males

(d) *Alytes* 4. Tail muscles are present and vertebrae are amphicoelous

Answer codes:

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

16. *Extra columella is lacking in:*

- a) Apoda
- b) Urodela
- c) Some anurans
- d) All

17. (i) Consider the following characteristics of an amphibian:

- a) Reduced lungs
- b) Copulatory organ present and fertilisation is internal
- c) Tail muscles are present
- d) Vertebrae are amphicoelous and ribs are free

(ii) The name of this amphibian is:

- a) Xenopus
- b) Ascaphus
- c) Alytes
- d) Rhacophorus

18. Which one of the following is not applicable to amphibians?

- a) Mesonephric kidney
- b) Persistent notochord
- c) Skull dicondylic
- d) Cranial nerves - 10 pairs

19. Which one of the following is a viviparous amphibian?

- a) Salamandra
- b) Dermophis thomensis
- c) Typhlonectes campressicauda
- d) All

20. *Consider the following statements:*

(A) The evolution of pentadactyl limbs and terrestrial respiration occurred during the Devonian period

(B) Amphibian skin lacks scales but in some cases dermal scales may be present

(C) The haemoglobin of a frog has relatively high affinity for oxygen in comparison with mammals

(D) Proteus and Necturus have highly developed organ of Jacobson

The correct statements are:

- a) All
- b) A and B
- c) Band C
- d) C and D

21. *Total neoteny is shown by:*

- a) Proteus
- b) Siren
- c) Ambystoma
- d) All

22. *Which one of the following is not applicable to Salamandra?*

- a) Four-limbed amphibians
- b) Lacks external ears
- c) Vocal sacs
- d) Exhibits paedomorphosis

23. *The distribution of amphibians is worldwide, except in:*

- a) Antarctica
- b) New Zealand
- c) Antarctica and Greenland
- d) Antarctica and Finland

24. *Caecilians possess:*

- a) Limbs
- b) Jaws and teeth
- c) Tail
- d) None



25. *Female frogs lack:*

- a) Copulatory pads
- b) Vocal sacs
- c) Mesorchium
- d) All

26. *Which one of the following is not applicable to Triton?*

- a) Eyelids
- b) Palatine teeth
- c) Neoteny
- d) Amphicoelous vertebrae

27. *Digits are opposable in:*

- a) Rhacophorus
- b) Hyla venulosa
- c) Chiromantis
- d) Megalobatrachus

28. *Vertebrae are not procoelous in:*

- a) Dendrobates
- b) Hyla
- c) Bufo
- d) Polypedates

29. *Which one of the following is toothless?*

- a) Bufo
- b) Rana
- c) Xenopus
- d) Toads

30. *Gymnophionas are found in:*

- a) Ethiopian region
- b) Oriental region
- c) Neotropical region



d) All

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

Column I Column II

(A) Mud nest 1. Salamandra atra

(B) Leaf nest 2. Triton

(C) Shoot nest 3. Phyllomedusa

(D) Viviparity 4. Hyla faber

Answer codes:

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

32. Sense of smell is well developed in:

- a) Anura
- b) Urodela
- c) Gymnophiona
- d) All

33. Salamandra is a member of class:

- a) Amphibia
- b) Reptilia
- c) Aves
- d) Mammalia

34. Which one of the following is an incorrect statement?

- a) Male frog has a vocal sac.
- b) A frog has ears but no pinnae.
- c) Functional kidney of frog tadpole is mesonephrous.

d) Frogs are ureotelic.

35. *Axolotl is the larva of:*

- a) Ambystoma
- b) Ichthyophis
- c) Siren
- d) Alytes

36. *Retention of sexual maturity during the larval stage is known as:*

- a) Polyembryony
- b) Cryptorichidism
- c) Neoteny
- d) Apolysis

37. *Neoteny is shown by:*

- a) Axolotllarva
- b) Tornaria larva
- c) Ammocoetus larva
- d) Leptocephalus

38. *In which one of the following is the tongue absent?*

- a) Ichthyophis
- b) Salamandra
- c) Bufo
- d) Siren

39. *The poison gland of Bufo is modified:*

- a) Mucous gland
- b) Parotid gland
- c) Sublingual gland
- d) Sebaceous gland

40. *Functional kidney of the tadpole larva of a frog is:*

- a) Archinephrous

- b) Pronephrous
- c) Mesonephrous
- d) Metanephrous

41. *Frogs are:*

- a) Cold-blooded amphibious gnathostomes
- b) Cold-blooded amphibious agnatha
- c) Warm-blooded amphibious gnathostomes
- d) Cold-blooded and retain chordate characters throughout life

42. Nitrogenous waste product of a frog is:

- a) Ammonia
- b) Urea
- c) Uric acid
- d) Urea and uric acid

43. Tadpole larva of a frog is:

- a) Ureotelic
- b) Uricotelic
- c) Ammoniotelic
- d) Aminotelic

44. During the hibernation period, the frog respire through:

- a) Lungs
- b) Skin
- c) Buccal epithelium
- d) All

45. *Skin of a frog contains:*

- a) Poison glands
- b) Mucous glands
- c) Both poison and mucous glands
- d) No gland

46. *Males are smaller than females and are without vocal sacs in:*

- a) Midwife toad
- b) Hyla
- c) Ichthyophis
- d) Salamandra

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

Column I	Column II
(A) Caecilians	1. Brood their developing young in vocal sac
(B) Poison dart frog	2. Brood the developing young in stomach
(C) <i>Rhynoderma darwini</i>	3. Young ones have developed jaws and teeth, which they use to scrap secretions called uterine milk from the walls of the oviducts
(D) <i>Rheobatrachus silus</i>	4. Mother carries tadpoles on her back

Answer codes:

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

48. Which one of the following has the ability to change their sex?

- a) *Hyperolius viridiflavus*
- b) *Rheobatrachus silus*
- c) *Oophaga pumilio*
- d) *Desmognathus acneus*

49. Which one of the following is incorrect about the white tree frog (*Litoria caerulea*)?

- a) Males are generally bigger than females
- b) Capable of colour change
- c) Eyes have horizontal pupils instead of vertical
- d) A fatty ridge is present over the eyes

50. Which one of the following is applicable to amphibians?

- a) Ectothermic



- b) Anaminote
- c) Juvenile water breathing
- d) All

51. *Which one of the following inhabits brackish waters?*

- a) *Hyperolius viridiflavus*
- b) *Typhlonectes compressicauda*
- c) *Fejervarya raja*
- d) *Rana temporaria*

52. *Chorus is applicable to:*

- a) Birds
- b) Elephants
- c) Frogs
- d) Rodents

53. *What is incorrect about *Xenopus*?*

- a) Males lack vocal cords
- b) Have ability to change their appearance
- c) Foot bears claws
- d) Have ability to change sex

54. *Which one of the following is not found in any fish nor urodela or apoda, but is present in anura?*

- a) Exoskeleton
- b) Cloacal aperture
- c) Tympanic membrane
- d) Nictitating membrane

55. *The entire primary palatoquadrate is unossified in:*

- a) *Rana temporaria*
- b) *Rana tigrina*
- c) *Rana pipens*
- d) *Rana esculenta*

56. *Gills are retained throughout life in:*

- a) Salamandra
- b) Necturus
- c) Alytes
- d) Ichthyophis

57. *Tick the correct match:*

- a) Necturus - neoteny
- b) Bufo - vocal sacs
- c) Xenopus - without tongue
- d) Proteus - axolotl

58. *Male frog can be distinguished from female frog by:*

- a) Having larger size
- b) Having vocal sacs and copulatory pads
- c) Having pigmented skin
- d) Having well-developed copulatory organ

59. *Which one of the following statements is incorrect?*

- a) Salamandra is a tailed amphibian.
- b) Necturus retains external gill throughout life.
- c) The number of salivary glands in frogs is two.
- d) There is no salivary gland in frogs.

60. *Absence of neck in frog helps it in:*

- a) Swimming
- b) Climbing
- c) Capturing of prey
- d) Jumping

61. *The respiratory organ of a tadpole larva is:*

- a) Lung
- b) Skin
- c) Gill

d) Buccal epithelium

62. *A diaphragm is lacking in:*

- a) Xenopus
- b) Ichthyophis
- c) Bombinator
- d) All

63. *Hellbender is the name of:*

- a) Triturus
- b) Megalobatrachus
- c) Cryptobranchus
- d) Alytes

64. *Parental care is absent in:*

- a) Rhacophorus
- b) Alytes
- c) Xenopus
- d) Hyla

65. *Indian bullfrog is:*

- a) Rana tigrina
- b) Rana esculenta
- c) Rana limnocharis
- d) Rana temporaria

66. *Jaws are toothless in:*

- a) Frogs
- b) Toads
- c) Fishes
- d) Snakes

67. *If a frog is transferred from 18°C to 30°C, its body temperature will change to:*

- a) 24°C
- b) 30°C
- c) Remain unchanged
- d) 19°C

68. Lack of metamorphosis in axolotl larva is due to:

- a) Deficiency of iodine in water or diet
- b) Deficiency of Na⁺ and K⁺ in water
- c) High concentration of iodine in water
- d) High concentration of Na⁺ and K⁺ in water

69. In urodels, the tail is devoid of tail fin, except:

- a) Salamandra
- b) Triton
- c) Cryptobranchus
- d) Trylotriton

70. The portal system is found in amphibians:

- a) Hepatic
- b) Renal
- c) Hypophyseal
- d) All

71. Limbs are lacking in members of the order:

- a) Anura
- b) Urodela
- c) Gymnophiona
- d) None

72. *Rhacophorus* is :

- a) Tree frog
- b) Flying frog
- c) Midwife toad
- d) Fire-bellied toad

73. *Direct development is shown by:*

- a) Eleutherodactylus
- b) Bombina orientalis
- c) Dendrobates ornata
- d) Ceratophrys

74. *What is incorrect about the order caudata?*

- a) Eyelids are present
- b) Claws on toes
- c) Urinary bladder is present
- d) All

75. *Batrachotoxin is present in high concentration in:*

- a) Phylllobates terribilus
- b) Atelopus
- c) Dendrobates
- d) Mynobates

76. *What is incorrect about the poison arrow frog?*

- a) Coloured body
- b) Active during day
- c) Lives in water
- d) Powerful toxin

77. *Which one of the following is a horned frog?*

- a) Phrynosoma
- b) Xenopus
- c) Ceratophrys
- d) Rhinoderma

78. *Which one of the following is known as Darwin's frog?*

- a) Notaden bennetti
- b) Chiroleptes platycephalus
- c) Rana sylvatica

d) *Rhinoderma darwinii*

79. *Ichthyostega* was one of the earliest:

- a) Bony fish
- b) Amphibian
- c) Reptile
- d) None

80. *The larval form does not feed before developing into an adult in:*

- a) *Ambystoma opacum*
- b) *Desmognathus aeneus*
- c) *Ascaphus truei*
- d) *Phyllobates*

81. *Pentadactyl limbs first appeared in:*

- a) Pisces
- b) Amphibians
- c) Reptiles
- d) Aves

82. *Midwife toad is the common name of:*

- a) *Xenopus*
- b) *Pipa*
- c) *Alytes*
- d) *Triturus*

83. *Internal fertilisation and penis-like extension from the cloacal chamber is found in:*

- a) *Ascaphus*
- b) *Cryptobranchus*
- c) *Megalobatrachus*
- d) *Triturus*

84. *The larval characteristic is retained by adults in:*

- a) Proteids
- b) Sirenids
- c) Amphiumids
- d) All

85. *Which one of the following statements incorrect concerning amphibians?*

- a) They are capable of respiration on land.
- b) The acquisition of lungs has resulted in a great change in their circulatory system.
- c) They have completely solved the problem of reproduction on land.
- d) They are the pioneer vertebrates to invade land from water.

86. *Tail muscles are absent in anurans, except:*

- a) Liopelma
- b) Breviceps
- c) Ascaphus
- d) Xenopus

87. *Elongated snake-like limbless amphibians belong to the order:*

- a) Anura
- b) Urodela
- c) Gymnophiona
- d) Squamata

88. *The amphibian that does not require water for breeding:*

- a) Ascaphus
- b) Dendrobates
- c) Elutherodactylus
- d) 'Phyllobates

89. *It has been observed that treatment of premetamorphic tadpoles stimulates the synthesis of:*

- a) Messenger RNA
- b) Ribosomal RNA
- c) Transfer RNA

d) All

90. Consider the following statements with reference to tadpole metamorphosis:

(A) There is an increase in total protein concentration during metamorphosis

(B) Larger RBCs of larvae are replaced by smaller adult RBCs

(C) Haemoglobin of tadpoles has more affinity for oxygen in comparison to adult haemoglobin

(D) Muscle tissues degenerate earlier than the connective tissues

The incorrect statements are:

a) A and B

b) A and C

c) B, C and D

d) None

91. Which one of the following toxins are unique to *Dendrobates historionicus* (Colombian arrow poison frog)?

a) Geyhyrotoxin

b) Geyphyrotoxin and histrionicotoxin

c) Batrachotoxin

d) Pyrrolizidines

92. Which one of the following is applicable to frogs?

a) Hibernation

b) Aestivation

c) Nictitating membrane

d) All

93. Adrenal glands having ectodermal, adrenaline-secreting tissue and mesodermal, steroid-secreting tissue first developed in:

a) Cyclostomata

b) Elasmobranchs

c) Dipnoi

d) Amphibians



94. Consider the following characteristics:

(A) Ribs are lacking

(C) Neotenuous forms

(B) Adults lack gills

(D) Mandible toothless

(d) None

Of the above mentioned characteristics, which one is not shown by anurans?

a) A

b) B

c) C

d) D

95. Which one of the following retains gill slits but not gills in adults?

a) Cryptobranchus

b) Necturus

c) Siren

d) Salamandra

96. Males have eversible cloaca in:

a) Salamandra

b) Necturus

c) Ichthyophis

d) None

97. Consider the following characters about urodela:

(A) Body is divisible into head, trunk and tail

(B) Tail fin is with fin rays

(C) Vocal cords are present

(D) Eyes are small with eyelids

The correct statements are:

a) A

b) Band C

c) C and D

d) A and D

98. *Hairy frog is the common name of:*

a) Ascaphus

b) Astylosternus

c) Ambystoma

d) Amphiuma

99. *Ichthyophis lacks:*

a) Limbs and tail

b) Tympanum

c) Middle ear and internal nares

d) All

100. *Longest gestation period is found in:*

a) Elephants

b) Blue Whales

c) Salamandra atra

d) Scoliodon

101. *Which one of the following is essential for amphibian metamorphosis?*

a) Calcitonin

b) Thyroxine

c) Thyroxine and Ca^{++}

d) Growth hormones

102. *Which one of the following is the largest vertebrate genus?*

a) Polypedates

b) Dendrobates

c) Eleutherodactylus

d) Rheobatorachus

103. *The only case of Mullerian mimicry in amphibians is shown by the:*

a) Plethodontidae



- b) Poison arrow frog family
- c) Rhinodermatidae
- d) Brevicipitidae

104. *The only type of anurans to bear live young ones:*

- a) Nectophrynoides
- b) Pseudobufo
- c) Brachycephalus
- d) Hydromantes platycephalus

105. *Consider the following statements about the skeleton of anurans:*

- (A) *There is a general reduction in skull and girdle elements*
- (B) *Ribs, if present, never articulate with the sternum*
- (C) *Atlas articulates with two occipital condyles*
- (D) *There is an increase in joints in the pelvic limbs to increase jumping ability*

The incorrect statements are:

- a) None
- b) A and B
- c) Band C
- d) A

106. *Which one of the following is a true poisonous frog?*

- a) Dendrobates
- b) Minyobates
- c) Phyllobates
- d) All

107. *Which one of the following amphibians brood the developing young one in their stomach and do not feed it during the developmental period?*

- a) *Rhinoderma darwinii*
- b) *Oophaga pumilio*



- c) *Salamandra maculosa*
- d) *Rheobatrachus silus*

108. *Which one of the following is a major source of energy during the early development of amphibians?*

- a) Fats
- b) Carbohydrates
- c) Proteins
- d) Fats and proteins

109. *The larval salamander can be distinguished from the adult salamander by the presence of:*

- a) Open gill slits and external gills
- b) A tail fin
- c) Specialised dentition
- d) All

110. *What is not common between tadpoles and adult anurans?*

- a) A wide head
- b) A short vertebral column
- c) Lack of neck
- d) A small mouth

111. *Tadpoles of family microhylidae lack keratinised structure, except:*

- a) Otophryne
- b) Rhinoderma
- c) Minyobates
- d) Ceratophrys

112. *Urinary bladder is lacking in:*

- a) *Acris*
- b) *Ascaphus*
- c) *Bufo boreas*

d) None

113. Consider the following statements:

(A) In *Ascapus truei*, the pupils are vertical and the tongue is attached posteriorly

(B) In anurans, the hindlimbs have four digits and the forelimbs have five digits

(C) Members of the order caudata have teeth in both upper and lower jaws

(D) Urinary bladder of amphibians serves as a storage site for water

The incorrect statements are:

a) A, C and D

b) A and D

c) All

d) None

114. Vertical eye pupils are a characteristic of the anuran family:

a) Hylidae

b) Bufonidae

c) Pelobatidae

d) Ranidae

115. In amphibians, minimum amount of water is lost by:

a) Head

b) Trunk

c) Limbs

d) Ventral surface

116. Which one of the following is incorrect about salamanders?

a) Largest genomes among tetrapods

b) Neoteny

c) Internal and external fertilisation

d) Presence of copulatory organs

117. Labyrinthodonts were:

a) Terrestrial

b) Aquatic

- c) Amphibious
- d) Arboreal

118. *Carotid arch is lacking in adults of the order:*

- a) Gymnophiona
- b) Anura
- c) Urodela
- d) None

119. *Which one of the following is applicable to Salamandra?*

- a) Regeneration and autotomy
- b) Secretion of pheromones
- c) Tri chromatic colour vision
- d) All

True or False

1. Amphibians are the only class of vertebrates having free-living tadpole and adult stages. TRUE
2. Amphibians first appeared on the earth during the Devonian period. TRUE
3. Ecdysis is common in amphibians. TRUE
4. Amphibians have the ability to change their body colour according to the surrounding environment. TRUE
5. Cannibalism is found in amphibians. TRUE
6. Amphibians lack the ability to differentiate between kin and nonkin. FALSE
7. Larvae of salamanders and caecilians are herbivorous. FALSE
8. Anuran larvae are herbivores. TRUE
9. The tentacles of caecilians are chemoreceptors. TRUE

10. Only oviparous caecilians show parental care. TRUE
11. In some anurans, development is direct. TRUE
12. All amphibians cannot hear. FALSE
13. Breeding in most amphibians is seasonal. TRUE
14. Salamandra maculosa is oviparous. FALSE
15. Amphibians have the same patterns of limbs and girdles, as found in higher tetrapods. TRUE
16. Eyelids are well developed in permanent aquatic amphibians. FALSE
17. The first cervical vertebra of frogs lacks centrum, but bears transverse processes. FALSE
18. Lateral line organs occur in tadpoles. TRUE
19. The caecilians are tropical in distribution. TRUE
20. The larvae of three living orders of amphibians are morphologically very similar. FALSE

