Dept. Of Zoology

Dinakrushna College, Jaleswar, Balasore

Question Bank — Semester 1, Paper: Core-1, Major-2

DIVERSITY OF CHORDATES: Protochordates to Mammalia

.Question Pattern Followed (based on previous year papers)

Section	Question Type	Marks
A	Fill in the Blanks	1 mark each (10 to be attempted)
B	Short Notes	2 marks each (9 to be attempted)
C	Write Notes / Answer (any eight)	5 marks each
D	Long / Essay type Answer (any four)	8 marks each

Unit 1: Protochordates and Origin of Chordates

Syllabus scope: General characteristics and outline classification of Chordata (Protochordata: Hemichordata, Urochordata and Cephalochordata). Study of larval forms in protochordates; Retrogressive metamorphosis in Urochordata; Dipleurula concept and the Echinoderm theory of origin of chordates.

SECTION A — Fill in the Blanks

32 questions · 1 mark each

1. Retrogressive metamorphosis occurs in _____phylum. *(Ans: Urochordata)* **[2024]**

2. Notochord is confined to the proboscis region in _____phylum. *(Ans: Hemichordata)* **[2024]**

3. Balanoglossus belongs to _____phylum. *(Ans: Hemichordata)* **[2024]**

4. The body of Ascidians is covered by a tunic or test made of a cellulose-like polysaccharide called _____. *(Ans: Tunicin)* **[2025]**

5. _____larva is a conceptual model based on the shared features of all echinoderm larvae, not a larva that is directly observed in nature. *(Ans: Dipleurula)* **[2025]**

6. Phylum Chordata is divided into _____subphyla.

7. Protochordates are also collectively known as _____chordates.

8. The notochord in Chordata is a _____(rigid/flexible) rod-like supporting structure.

9. Hemichordata was earlier included under phylum Chordata but is now generally treated as a _____phylum.

10. The proboscis of Balanoglossus is also referred to as the _____.

11. The ciliated, free-swimming larva of Hemichordata is called _____.

12. The tornaria larva of Hemichordata closely resembles the larva of _____.

13. Urochordata are commonly known as _____.

14. In Urochordata, the notochord is confined to the _____region of the tail in the larva.

15. The adult form of most Urochordates is _____(sessile/free-swimming).

16. Cephalochordata is represented by the genus _____.

17. In Amphioxus, the notochord extends from the anterior end to almost the _____end of the body.

18. The buccal cavity of Amphioxus is surrounded by ciliated tentacle-like structures called _____.

19. The straining/filtering organ used for feeding in Amphioxus is called the _____.

20. The excretory organs of larval structures such as the _____during transition to the adult stage.

22. In the Ascidian tadpole larva, metamorphosis leads to the Amphioxus are called _____.

21. Retrogressive metamorphosis involves the loss of

loss of the notochord and _____.

23. The three fundamental characters common to all Chordates are notochord, dorsal hollow nerve cord and _____.

24. Pharyngeal gill slits in Chordata are primarily associated with the process of _____.

25. The Echinoderm theory of origin of Chordates is based on similarities in _____between hemichordate and echinoderm larvae.

26. According to the Echinoderm theory, Chordates are believed to share a common ancestor with _____.

27. The auricularia larva of class Holothuroidea closely resembles the _____larva of Hemichordata.

28. Doliolaria larva is found in class _____of Echinodermata.

29. The wheel organ found in Amphioxus is located in the _____.

30. The gonads of Amphioxus lack a duct and open into the _____.

31. A post-anal tail is a diagnostic feature found in Chordata during at least the _____stage.

32. Colonial forms of Urochordata such as Salpa reproduce by _____.

SECTION B — Short Notes

30 questions · 2 marks each

1. List the three fundamental characters of Chordates. **[2024]**

2. What are protochordates? **[2024]**

3. What is wheel organ? **[2024]**

4. State the features of Cephalochordata. **[2025]**

5. Explain the Echinoderm theory of origin of chordates. **[2025]**

6. General characteristics of Hemichordata

7. General characteristics of Urochordata

8. General characteristics of Cephalochordata

9. Outline classification of Chordata

10. Tornaria larva

11. Ascidian tadpole larva

12. Retrogressive metamorphosis - definition and examples

13. Dipleurula concept

14. Auricularia larva

15. Doliolaria larva

16. Notochord and its significance

17. Pharyngeal gill slits

18. Post-anal tail in Chordata

19. Endostyle in protochordates

20. Atrium (peribranchial cavity) in Urochordata

21. Test/tunic in Ascidians

22. Buccal cirri in Amphioxus

23. Myotomes (segmented muscles) in Amphioxus

24. Larval forms in protochordates - an overview

25. Neoteny and paedomorphosis

26. Differences between Urochordata and Cephalochordata

27. Position of Hemichordata in classification

28. Affinities of Hemichordata with Chordata and non-chordates

29. Affinities of Cephalochordata with vertebrates

30. Significance of the Echinoderm theory in understanding chordate ancestry

SECTION C — Write Notes / Answer (5 Marks)

30 questions · 5 marks each

1. Dipleurula concept **[2024]**

2. Urochordata **[2024]**

3. Outline classification of Chordata **[2025]**

4. Retrogressive metamorphosis in Urochordata **[2025]**

5. General characteristics and classification of Hemichordata

6. General characteristics and classification of Urochordata

7. General characteristics and classification of Cephalochordata

8. Structure and life history of Balanoglossus

9. Tornaria larva and its significance

10. Ascidian tadpole larva and its structure

11. Retrogressive metamorphosis and its biological significance

12. Dipleurula concept and its significance in chordate evolution

13. Echinoderm theory of origin of chordates

14. Auricularia and Doliolaria larvae - a comparative account

15. Fundamental characters of Chordata

16. Notochord - structure, position and fate in different chordate groups

17. Endostyle and its evolutionary significance

18. Structure of Amphioxus (Branchiostoma)

19. Feeding mechanism in Amphioxus

20. Excretory system of Amphioxus

21. Affinities of Hemichordata

22. Position of Hemichordata: chordate or non-chordate?

23. Comparative account of the three protochordate subphyla

24. Neoteny in Urochordata

25. Colonial organisation in Urochordata (e.g., Salpa, Doliolum)

26. Larval forms of Echinodermata in relation to chordate ancestry

27. Origin of vertebrates - an overview of theories

28. Significance of pharyngeal gill slits in chordate evolution

29. Body plan of a generalised protochordate

30. Evolutionary trends from Protochordata to Vertebrata

SECTION D — Long Answer / Essay Type (8 Marks)

10 questions · 8 marks each

1. Describe retrogressive metamorphosis in Urochordata in detail. **[2024]**

2. Give an account of the larval forms in protochordates. **[2025]**

3. Discuss the general characteristics and classification of phylum Hemichordata, Urochordata and Cephalochordata.

4. Give a detailed account of the Dipleurula concept and the Echinoderm theory of origin of Chordates.

5. Describe the structure and life history of Balanoglossus with special reference to the tornaria larva.

6. Discuss the affinities of Hemichordata with Chordata and non-chordates.

7. Give a detailed account of the structure and biology of Amphioxus (Branchiostoma).

8. Discuss the various theories on the origin of Chordates.

9. Describe the general characteristics and outline classification of phylum Chordata.

10. Give an illustrated account of larval forms found in Urochordata and Echinodermata and their evolutionary significance.

Unit 2: Agnatha, Pisces & Amphibia

Syllabus scope: General characteristics and classification up to order. Migration and parental care in fishes, accessory respiratory organs in Pisces, evolutionary significance of Dipnoi. Amphibia: origin of Tetrapoda (evolution of terrestrial ectotherms); parental care.

SECTION A — Fill in the Blanks

30 questions · 1 mark each

1. Limbless amphibians belong to _____order. *(Ans: Apoda (Gymnophiona))* **[2024]**

2. Migration of fishes from salt water to fresh water is known as _____. *(Ans: Anadromous migration)* **[2024]**

3. The earliest fossils of tetrapoda are known as _____. *(Ans: Ichthyostega)* **[2024]**

4. Dipnoi are commonly known as _____. *(Ans: Lungfishes)* **[2024]**

5. The buccal funnel in _____is suctorial and shows horny teeth. *(Ans: Cyclostomata (e.g., Lamprey))* **[2025]**

6. The swim bladder in bony fishes is a sac-like outgrowth arising from the dorsal wall of the _____. *(Ans: Foregut / oesophagus)* **[2025]**

7. In the order _____of class Amphibia, the eyes of the animals are small and covered by skin, hence they are called "blind worms". *(Ans: Gymnophiona (Apoda))* **[2025]**

8. Class Agnatha includes jawless fishes such as lampreys and _____.

9. Cyclostomes possess a _____mouth that lacks true jaws.

10. Lampreys generally lead a _____(parasitic/free-living) mode of life on other fishes.

11. Hagfishes belong to class _____.

12. Class Pisces is broadly divided into Chondrichthyes and _____.

13. Chondrichthyes possess an endoskeleton made largely of _____.

14. In Chondrichthyes, the gill slits are _____(covered/not covered) by an operculum.

15. Bony fishes are placed under class _____.

16. The gills in bony fishes are covered by a bony flap called the _____.

17. Migration of fishes from fresh water to the sea for breeding is called _____ migration.

18. Salmon is a classic example of a fish exhibiting _____type of migration.

19. Eel (Anguilla) is a classic example of a fish exhibiting _____type of migration.

20. Accessory respiratory organs help fishes survive in _____water conditions.

21. The labyrinthine organ, an accessory respiratory structure, is found in fishes such as _____.

22. The arborescent organ is an accessory respiratory structure found in _____fish.

23. Lungfishes (Dipnoi) are of great evolutionary significance as they show affinities with _____.

24. The paired fins of Dipnoi are considered evolutionary precursors of the _____of tetrapods.

25. Class Amphibia is considered the first group of vertebrates to colonise _____habitat.

26. The evolution of terrestrial ectotherms from fish-like ancestors marks the origin of _____.

27. Order Anura of Amphibia includes tailless forms such as frogs and _____.

28. Order Urodela of Amphibia includes tailed forms such as _____.

29. In many fishes, parental care is more commonly exhibited by the _____ (male/female) parent.

30. Nest building is a common mode of parental care seen in fishes such as _____.

SECTION B — Short Notes

30 questions · 2 marks each

1. What is catadromous migration in Fishes? **[2024]**

2. What are accessory respiratory organs of Fishes? **[2024]**

3. Write the general characteristics of Agnatha. **[2025]**

4. State the evolutionary significance of Dipnoi. **[2025]**

5. Explain the origin of Tetrapoda. **[2025]**

6. General characteristics of Chondrichthyes

7. General characteristics of Osteichthyes

8. Classification of Pisces up to order

9. Anadromous migration

10. Catadromous migration

11. Labyrinthine organ

12. Arborescent organ

13. Air bladder (swim bladder) and its functions

14. Parental care in fishes - an overview

15. Nest building in fishes

16. Mouth brooding in fishes

17. Evolutionary significance of Dipnoi

18. Origin of Tetrapoda

19. General characteristics of Amphibia

20. Classification of Amphibia up to order

21. Order Apoda (Gymnophiona)

22. Order Urodela

23. Order Anura

24. Parental care in Amphibia - an overview

25. Neoteny in Amphibia

26. Parasitic adaptations of Cyclostomes

27. Structure of the buccal funnel in Lamprey

28. Cutaneous (skin) respiration in Amphibia

29. Adaptive significance of accessory respiratory organs in fishes

30. General characteristics of class Pisces

SECTION C — Write Notes / Answer (5 Marks)

30 questions · 5 marks each

1. Parental care in Fishes **[2024]**

2. General characters of Pisces **[2024]**

3. Order-Urodela **[2024]**

4. Classification of Chondrichthyes up to order **[2025]**

5. Arborescent organ and labyrinthine organ in fishes **[2025]**

6. Origin of Tetrapoda **[2025]**

7. General characteristics and classification of Agnatha

8. General characteristics and classification of Chondrichthyes up to order

9. General characteristics and classification of Osteichthyes up to order

10. Migration in fishes - types and significance

11. Accessory respiratory organs in fishes and their adaptive significance

12. Evolutionary significance of Dipnoi

13. Structure and function of the swim bladder

14. Parental care in fishes with suitable examples

15. General characteristics and classification of Amphibia up to order

16. Origin of tetrapods from fish-like ancestors

17. Evolution of terrestrial ectotherms

18. Parental care in Amphibia with suitable examples

19. Order Apoda - characteristics and examples

20. Order Urodela - characteristics and examples

21. Order Anura - characteristics and examples

22. Structural adaptations of Cyclostomes for a parasitic mode of life

23. Comparative account of Chondrichthyes and Osteichthyes

24. Gill structure and respiration in fishes

25. Skin and cutaneous respiration in Amphibia

26. Neoteny and paedomorphosis in Amphibia

27. Fossil evidence in the evolution of Tetrapoda (Ichthyostega)

28. Adaptive radiation in Pisces

29. Economic importance of fishes

30. Reproductive strategies in Amphibia

SECTION D — Long Answer / Essay Type (8 Marks)

10 questions · 8 marks each

1. Describe different accessory respiratory organs in fishes and their significance. **[2024]**

2. Give an illustrated account of migration in fishes. **[2025]**

3. Write an essay on parental care in Amphibia. **[2025]**

4. Describe the general characteristics and classification of class Pisces up to order with examples.

5. Discuss the evolutionary significance of Dipnoi in relation to the origin of tetrapods.

6. Give a detailed account of the origin of Tetrapoda and the evolution of terrestrial ectotherms.

7. Discuss parental care in fishes with suitable examples.

8. Describe the general characteristics and classification of class Amphibia up to order with examples.

9. Give a detailed account of the general characteristics and classification of class Agnatha.

10. Discuss the various types of migration observed in fishes with suitable examples.

Unit 3: Reptilia & Aves

Syllabus scope: General characteristics and classification up to order. Affinities of Sphenodon; poison apparatus and biting mechanism in snakes. Archaeopteryx - a connecting link; flight adaptations and migration in birds.

SECTION A — Fill in the Blanks

30 questions · 1 mark each

1. The connecting link between reptiles and birds is _____. *(Ans: Archaeopteryx)* **[2024]**

2. Wings of birds are depressed or lowered by _____muscles. *(Ans: Pectoralis major)* **[2024]**

3. The poison glands in snakes are assumed to be modified superior labial or _____glands. *(Ans: Parotid)* **[2025]**

4. _____, having a box-like exoskeleton, are assumed to be the direct descendants of primitive cotylosaurs. *(Ans: Chelonia (turtles/tortoises))* **[2025]**

5. When some birds disperse to a short or long distance for safety and food, it is called _____migration. **[2025]**

6. Class Reptilia is characterised by a body covering of dry, _____scales.

7. Reptiles are typically _____(poikilothermic/homoiothermic) animals.

8. Sphenodon is commonly known as the _____.

9. Sphenodon is often referred to as a "living fossil" because it retains many _____characters.

10. Order Rhynchocephalia is represented today by the single living genus _____.

11. Order Squamata includes lizards and _____.

12. Order Chelonia (Testudines) includes turtles and _____.

13. Order Crocodilia includes crocodiles and _____.

14. In venomous snakes, poison is injected into the prey through modified teeth called _____.

15. Fangs in vipers are of the _____(fixed/movable) type.

16. Snake venom is essentially a modified _____secretion.

17. Archaeopteryx possessed reptilian features such as teeth and a long bony _____.

18. Archaeopteryx also possessed avian features such as _____covering the body.

19. Archaeopteryx is dated to the _____period.

20. Class Aves is uniquely characterised by the presence of _____on the body.

21. The forelimbs of birds are modified into _____.

22. The keel-like extension of the sternum in flying birds is called the _____.

23. Bones of birds are typically _____(solid/pneumatic) to reduce body weight.

24. The flight muscle primarily responsible for the downstroke of the wing is the _____.

25. Migration in birds is mainly triggered by changes in _____and food availability.

26. Birds that migrate over very long distances, such as the Arctic Tern, exhibit _____migration.

27. Ratites are _____(flying/flightless) birds.

28. Order Sphenisciformes includes flightless, aquatic birds such as _____.

29. Order Psittaciformes includes _____.

30. Carinate birds possess a well-developed, keeled sternum, in contrast to the flat sternum of _____.

SECTION B — Short Notes

30 questions · 2 marks each

1. Mention the characters in which Sphenodon differs from reptiles. **[2024]**

2. What is poisonous apparatus in Snakes? **[2024]**

3. Write the general characteristics of reptiles. **[2025]**

4. Classify Aves up to order. **[2025]**

5. Justify Archaeopteryx as a connecting link. **[2025]**

6. General characteristics of class Reptilia

7. Classification of Reptilia up to order

8. Affinities of Sphenodon

9. Biting mechanism in snakes

10. Types of fangs in snakes

11. Structure of poison glands in snakes

12. General characteristics of class Aves

13. Classification of Aves up to order

14. Archaeopteryx as a connecting link between reptiles and birds

15. Skeletal adaptations for flight in birds

16. Muscular adaptations for flight in birds

17. Flight muscles in birds

18. Types of migration in birds

19. Types of migration in birds based on distance

20. Ratites and Carinates - a comparison

21. Order Chelonia

22. Order Crocodilia

23. Order Squamata

24. Order Rhynchocephalia

25. Feathers and their types in birds

26. Pneumatic bones in birds

27. Adaptive significance of the keel (carina) in birds

28. Composition and effects of venom in poisonous snakes

29. Thermoregulation in reptiles

30. Navigation mechanisms in migratory birds

SECTION C — Write Notes / Answer (5 Marks)

30 questions · 5 marks each

1. Affinities of Sphenodon **[2024 / 2025]**

2. Archaeopteryx **[2024]**

3. Migratory birds **[2024]**

4. Anatomical flight adaptations in birds **[2025]**

5. Migration in birds **[2025]**

6. General characteristics and classification of Reptilia up to order

7. Affinities of Sphenodon with reptiles and its living-fossil status

8. Poison apparatus in snakes - structure and function

9. Biting mechanism in venomous snakes

10. Types and classification of snake venom

11. General characteristics and classification of Aves up to order

12. Archaeopteryx as a connecting link - anatomical evidence

13. Flight adaptations in birds - an overview

14. Skeletal modifications for flight in birds

15. Muscular adaptations for flight in birds

16. Migration in birds - causes and patterns

17. Types of bird migration based on distance and direction

18. Navigation and orientation mechanisms in migratory birds

19. Ratite birds and their distribution

20. Order Chelonia - characteristics and examples

21. Order Crocodilia - characteristics and examples

22. Order Squamata - characteristics and examples

23. Comparative account of reptilian and avian characters in Archaeopteryx

24. Origin and evolution of birds from reptiles

25. Thermoregulation and ectothermy in reptiles

26. Structural adaptations of snakes for a limbless mode of life

27. Feather structure and function in birds

28. Sternum and its role in avian flight

29. Economic and ecological importance of birds

30. Conservation issues related to migratory birds

SECTION D — Long Answer / Essay Type (8 Marks)

10 questions · 8 marks each

1. Describe general characters of reptile and classify up to orders with suitable examples. **[2024]**

2. Write a note on flight adaptations in birds. **[2024]**

3. Describe the poison apparatus and biting mechanism in snakes. **[2025]**

4. Discuss the affinities of Sphenodon and its evolutionary significance as a living fossil.

5. Give a detailed account of the general characteristics and classification of class Aves up to order.

6. Discuss Archaeopteryx as a connecting link between reptiles and birds with suitable anatomical evidence.

7. Describe the skeletal and muscular adaptations for flight in birds.

8. Discuss the types, causes and mechanisms of migration in birds.

9. Give a detailed account of the poison apparatus and biting mechanism in venomous snakes.

10. Describe the general characteristics and classification of class Reptilia up to order with examples.

Unit 4: Mammals & Zoogeography

Syllabus scope: General characters and classification up to order; affinities of Prototheria; adaptive radiation with reference to locomotory appendages. Zoogeographical realms, theories pertaining to distribution of animals, plate tectonic and continental drift theory, distribution of vertebrates in different realms.

SECTION A — Fill in the Blanks

30 questions · 1 mark each

1. The _____zoogeographical realm is popularly known as the realm of birds. *(Ans: Neotropical)* **[2024]**

2. The type of locomotion in mammals in which only the tips of the toes touch the ground is known as _____locomotion. *(Ans: Digitigrade)* **[2025]**

3. In 1939, _____postulated the climatic theory pertaining to distribution of animals. **[2025]**

4. Class Mammalia is characterised by the presence of _____glands.

5. Mammals are _____(poikilothermic/homoiothermic) animals.

6. Subclass Prototheria includes egg-laying mammals, also called _____.

7. The duck-billed platypus and Echidna belong to subclass _____.

8. Subclass Metatheria includes pouched mammals, also called _____.

9. Subclass Eutheria includes _____mammals that develop a true placenta.

10. Prototherians show reptilian affinities such as the presence of a common urino-genital and digestive opening called the _____.

11. Locomotion in which the whole sole of the foot touches the ground is called _____locomotion.

12. Locomotion in which only the claws or hooves touch the ground is called _____locomotion.

13. The forelimbs of bats are modified into _____for flight.

14. The forelimbs of whales are modified into _____for swimming.

15. The limbs of moles are modified into _____for digging.

16. Adaptive radiation refers to the diversification of an ancestral form into several species adapted to different _____.

17. Zoogeography is the branch of biology dealing with the _____of animals across the globe.

18. The world is divided into _____major zoogeographical realms.

19. The Palaearctic and Nearctic realms are sometimes combined and referred to as the _____realm.

20. The Australian realm is characterised by the dominance of _____mammals.

21. The Oriental realm includes the Indian subcontinent and _____.

22. The Neotropical realm is located mainly in _____.

23. The Ethiopian (Afrotropical) realm covers most of _____.

24. The continental drift theory was proposed by _____.

25. According to the continental drift theory, all continents were once joined together into a single landmass called _____.

26. Plate tectonic theory explains the movement of continents due to the movement of _____plates.

27. The break-up of Gondwanaland gave rise to continents such as _____and _____.

28. Discontinuous distribution of closely related species in widely separated regions is termed _____distribution.

29. Species restricted to a particular geographical region are called _____species.

30. The distribution of vertebrates across realms is influenced by both climatic factors and _____history.

SECTION B — Short Notes

30 questions · 2 marks each

1. Describe adaptive radiation. **[2024]**

2. Write a short note on order Monotremata (mention two identifying characters with example). **[2024]**

3. Explain plantigrade locomotion citing suitable example. **[2025]**

4. General characteristics of class Mammalia

5. Outline classification of Mammalia up to order

6. Affinities of Prototheria with reptiles

7. Subclass Metatheria - characteristics

8. Subclass Eutheria - characteristics

9. Digitigrade locomotion

10. Unguligrade locomotion

11. Adaptive radiation in mammalian limbs

12. Locomotory adaptations in bats

13. Locomotory adaptations in aquatic mammals

14. Locomotory adaptations in fossorial (digging) mammals

15. Zoogeographical realms - an overview

16. Palaearctic realm

17. Nearctic realm

18. Oriental realm

19. Ethiopian (Afrotropical) realm

20. Neotropical realm

21. Australian realm

22. Continental drift theory

23. Plate tectonic theory

24. Gondwanaland and Laurasia

25. Discontinuous distribution of animals

26. Endemism in animal distribution

27. Climatic theory of distribution of animals

28. Wallace's line and its significance

29. Role of geological history in vertebrate distribution

30. Barriers to animal distribution (physical and climatic)

SECTION C — Write Notes / Answer (5 Marks)

30 questions · 5 marks each

1. Continental drift theory **[2024]**
2. Monotremes **[2024]**
3. General characters of Mammals **[2025]**

4. Zoogeographical realms **[2025]**

5. General characteristics and classification of Mammalia up to order

6. Affinities of Prototheria with reptiles

7. Adaptive radiation in mammals with reference to locomotory appendages

8. Digitigrade, plantigrade and unguligrade locomotion - a comparative account

9. Locomotory adaptations in flying and gliding mammals

10. Locomotory adaptations in aquatic mammals

11. Locomotory adaptations in fossorial mammals

12. Subclass Metatheria - characteristics and examples

13. Subclass Eutheria - characteristics and examples

14. Continental drift theory and its evidence

15. Plate tectonic theory and its role in animal distribution

16. Break-up of Gondwanaland and its effect on vertebrate distribution

17. Palaearctic and Nearctic realms - a comparative account

18. Oriental realm - fauna and characteristics

19. Ethiopian (Afrotropical) realm - fauna and characteristics

20. Neotropical realm - fauna and characteristics

21. Australian realm - fauna and characteristics

22. Discontinuous distribution and its causes

23. Endemism and its significance in zoogeography

24. Climatic theory of distribution of animals

25. Wallace's line and its zoogeographical significance

26. Theories pertaining to distribution of animals - an overview

27. Distribution of vertebrates in different zoogeographical realms

28. Role of barriers in shaping faunal distribution

29. Evolutionary significance of Prototheria

30. Mammalian dentition and its classificatory significance

SECTION D — Long Answer / Essay Type (8 Marks)

9 questions · 8 marks each

1. Discuss adaptive radiation in mammals with reference to locomotory appendages. **[2024]**

2. Give an account of the affinities of Prototheria. **[2025]**

3. Describe the general characteristics and classification of class Mammalia up to order with examples.

4. Discuss the zoogeographical realms of the world with reference to their characteristic vertebrate fauna.

5. Give a detailed account of the continental drift theory and plate tectonic theory in relation to animal distribution.

6. Discuss the various theories pertaining to distribution of animals.

7. Describe adaptive radiation in mammalian locomotory appendages with suitable examples.

8. Give a detailed account of the affinities of Prototheria with reptiles and their evolutionary significance.

9. Discuss the distribution of vertebrates in different zoogeographical realms.