

**ZOOLOGY**  
**PAPER – I FISH BIOLOGY**  
**SEMESTER – III, INTERNAL-I**

**I. Multiple choice questions.**

1. Which of the following fish is called eagle ray [ D]  
a) catla                      b) scoliodon                      c) torpedo                      d) Aetobatus
2. The largest family of bony fishes is [ D]  
a) Heterodontidae                      b) Pristidae                      c) Coelacanthidae                      d) Cyprinidae
3. Rhomboid Scales Occur [ C]  
a) All bony fish                      b) All cartilaginous fish                      c) Sturgeons                      d) Reed fishes
4. Anal fin is modified to serve as gonopodium in [ C]  
a) Cobitidae                      b) cyprinidae                      c) Poeciliidae                      d) Mastacembelidae
5. The Pelvic girdle is a pair of cartilage bones in [ B]  
a) chimaeras                      b) Elasmobranchi                      c) Bony fishes                      d) Langfishes
6. The erythrocytes of fish are [A]  
a) Nucleated                      b) Without nucleus                      c) Very small                      d) None
7. Some fishes pump urea back into the blood they are [B ]  
a) All fishes                      b) Elasmobranchs                      c) Bony fish                      d) Cyprinids
8. Which of the following is not a digestive gland [C]  
a) Liver                      b) Pancreas                      c) Intestinal Caeca                      d) All

9. Swim bladder Produces sound in [ D ]  
a) All Fishes                      b) Deepseafishes                      c) Polypterus                      d) Anguilla
10. Which of the following fish are anadromous [ B ]  
a) Anguilla                      b) Pacific Salmons                      c) Mackerels                      d) Tunas
11. The exoskeleton of sharks and rays is made of [ C ]  
a) Bone    b) Enamel    c) Placoid scales    d) Cycloid scales
12. The air bladder is primarily used for: [ B ]  
a) Breathing    b) Buoyancy regulation    c) Reproduction    d) Excretion
13. The class containing cartilaginous fishes is [ B ]  
a) Osteichthyes    b) Chondrichthyes    c) Agnatha    d) Cyclostomata
14. The dermal pigments of fishes are produced by [ A ]  
a) Chromatophores    b) Melanocytes    c) Keratinocytes    d) Mucous cells
15. Holocephali are commonly known as [ B ]  
a) Lungfishes    b) Ratfishes or Chimaeras    c) Bony fishes    d) Lampreys
16. The fish group showing the first appearance of jaws [ A ]  
a) Placoderms    b) Ostracoderms    c) Acanthodians    d) Cyclostomes
17. Which fin mainly controls the direction of movement? [ B ]  
a) Dorsal fin    b) Pectoral fin    c) Caudal fin    d) Anal fin
18. The lateral line system helps fishes in detecting [ C ]  
a) Electric impulses    b) Sound    c) Water vibrations    d) Light
19. Dynamic lift in sharks is generated by [ B ]  
a) Swim bladder    b) Pectoral fins    c) Dorsal fins    d) Tail fins only

20. Osmoregulation in marine fishes involves

[ B ]

- a) Absorbing water through gills                      b) Excreting excess salts
- c) Storing water in swim bladder                      d) Drinking less water

## II. Fill in the Blanks

21. Cyclostomata means **circular mouth**

22. In Petromyzon There are **7** Pairs of gill apertures behind eyes

23. Presence of heterocercal tail is a characteristic feature of **Elasmobranchs**

24. In dipnoi the tail is **diphycercal**

25. Presence of **swim bladder** is a characteristic of bony fish

26. Polypterid has **ganoid** scales

27. Fish kidney is unable to procure a **concentrated** Urine

28. Bony Fishes in the Sea live in **hypertonic** Medium

29. Feeding habits of larva, fingerling & Adult fish are **different**

30. The shape is Streamlining adaptation for movement through **water** medium

31. The study of fishes is called **Ichthyology**.

32. **Ostracoderms** lacked true jaws.

33. **Placoderms** had a body covered with bony plates.

34. Sharks regulate buoyancy by a large liver rich in **oil**.

35. The swim bladder helps bony fishes in maintaining **buoyancy**.

36. **Chromatophores** are pigment cells found in fish skin.

37. The epidermis of fishes is non-keratinized and contains **mucous glands**.
38. The dermis of fish skin gives rise to **scales**.
39. Placoid scales are characteristic of **cartilaginous fishes**.
40. Cycloid and ctenoid scales occur in **teleost** fishes.

### III. Short Answers questions

(1) Types of Scales in Fishes

A) Placoid scales, ganoid scales, cycloid scales, ctenoid scales.

(2) Type of Migration in fish

A) Anadromous migration & catadromous migration.

(3) What is osmoregulation ?

A) Osmoregulation is the physiological process by which fishes maintain the balance of water and salts in their bodies despite differences between their internal fluids and the surrounding water.

(4) Explain Ganoid Scale

A) Ganoid scales are rhomboid, hard, and shiny scales covered with a layer of ganoine (an enamel-like substance).

(5) What is catadromous migration ?

A) Catadromous migration refers to the movement of fishes from freshwater to the sea for spawning and returning to freshwater after breeding.

- Example: *Anguilla anguilla* (European eel).

(6) Define "Ichthyology."

A) Ichthyology is the branch of zoology that deals with the study of fishes, including their classification, structure, physiology, and ecology.

(7) Name any two jawless fishes.

A) Petromyzon (lamprey) and Myxine (hagfish).

(8) What is the function of the swim bladder?

A) The swim bladder helps fishes in maintaining buoyancy — allowing them to float or sink in water without much effort.

(9) Name the pigment cells responsible for fish coloration.

A) The pigment cells responsible for coloration are called chromatophores.

(10) What are placoid scales?

A) Placoid scales are tiny, tooth-like dermal scales found in cartilaginous fishes (like sharks and rays), composed of dentine and enamel, giving the skin a rough texture.