

Model Test Paper for PhD Entrance Test Zoology (Part- 2)

Multiple choice questions

Time: 1:30 hrs

Maximum Marks: 50

Instructions:

- a. All questions carries equal marks (1 mark each)**
- b. Mark the correct answer out of four options**

1. Which of the following mixture in aqueous solution of equimolar concentration acts as a buffer solution?

- a) $\text{NH}_4\text{OH}(\text{excess}) + \text{HCl}$
- b) $\text{HNO}_3 + \text{NaOH}$
- c) $\text{CH}_3\text{COOH} + \text{NaOH}(\text{excess})$
- d) $\text{H}_2\text{SO}_4 + \text{KOH}$

2. Who deduced the double-helical structure of DNA?

- a) Watson and Francis Crick
- b) Frederick Sanger
- c) Anton van Leeuwenhoek
- d) Mendel

3. Which of the following is abundantly found in collagen?

- a) Tryptophan
- b) Alanine
- c) Glycine
- d) Serine

4. Which of the following is an invagination of the muscle cell's sarcolemma?

- a) T tubules

b) Sarcoplasmic reticula

c) Microtubules

d) Cisternae

5. Which of the following enzyme catalyzes a reaction that introduces reduced nitrogen into cellular metabolism?

a) Bacterial dinitrogenase reductase

b) Phosphatase

c) Bacterial glutamine synthase

d) Bacterial dinitrogenase oxidase

6. What is immunology?

a) The study of insects

b) The study of the immune system and its responses

c) The study of astronomy

d) The study of rocks and minerals

7. What does MHC stand for in immunology?

a) Molecular Host Carrier

b) Membrane Homeostasis Control

c) Major Histocompatibility Complex

d) Microscopic Health Component

8. Which of these cells give rise to antibodies?

a) T cells

b) Lymphocytes

c) Plasma cells

d) B cells

9. What are thymocytes?

a) Matured B cells

b) Immatured B cells

c) Matured T cells

d) Immatured T cells

10. Which of the following process gives rise to all the cells of immune system?

a) Hemopoiesis

b) Hemocytosis

c) Hematopoiesis

d) Hematocytosis

11. Which of the following process gives rise to all the cells of immune system?

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12. In immunology, what does tolerance refer to?

a) The ability of the immune system to recognize self from non-self

b) The resistance of an organism to diseases

c) The ability of the immune system to respond vigorously to pathogens

d) The rapid activation of immune responses

13. Which of the following is used by cells to interact with other cells?

a) Cell tubules

b) Cell junctions

- c) Cell adhesions
- d) Cell detectors

14. In which of the following type of cells Sarcoplasmic reticulum is found?

- a) muscle cells
- b) liver cells
- c) kidney cells
- d) neurons

15. DNA is stored in which of the following cell organelle?

- a) Cell wall
- b) Cell Membrane
- c) Nucleus
- d) Cytoplasm

16. Who proposed the cell theory?

- a) Theodor Schwann, Watson and Robert Hooke
- b) Theodor Schwann, Matthias Schleiden and Robert Hooke
- c) Theodor Schwann, Matthias Schleiden and Rudolf Virchow
- d) NTheodor Schwann, Rudolf Virchow and Robert Hooke

17. Protein synthesis takes place in which of the following cell organelle?

- a) Cell wall
- b) Ribosome
- c) Nucleus
- d) Cytoplasm

18. Which of the following is the process of synthesis of glucose?

- a) saccharification
- b) glycolysis
- c) gluconeogenesis

d) neogenesis

19. Which of the following site is represented by Loops in lampbrush chromosomes?

- a) Crossing over
- b) Cell division
- c) Replication
- d) Transcription

20. Which of the following promote curvature of cell membrane?

- a) Phosphatidyl serine (PS)
- b) Phosphatidylinositol(PI)
- c) Phosphatidyl choline (PC)
- d) Phosphatidyl ethanolamine (PE)

21. Which of the following cells do not usually divide but can be induced to divide?

- a) liver cells
- b) red blood cells
- c) hair cells
- d) hair follicles

22. The culture of prawns is called:

- A) Pisciculture
- B) Sericulture
- C) Apiculture
- D) Prawn culture

23. Which is a common disease in fish caused by poor water quality?

- A) White spot disease
- B) Anthrax
- C) Swine flu
- D) Marek's disease

24. Which Indian institute is famous for fisheries education and research?

- A) IARI, New Delhi
- B) CIFRI, Barrackpore
- C) CFTRI, Mysore
- D) IIFPT, Thanjavur

25. Which fish is known as a surface feeder?

- A) Catla
- B) Mrigal
- C) Common carp
- D) Rohu

26. Composite fish culture involves:

- A) Culturing only marine fishes
- B) Culturing fishes of the same feeding habit
- C) Culturing different species of fish together
- D) Culturing fish in aquariums

27. The ideal pH range for freshwater fish farming is:

- A) 4.5 – 5.0
- B) 6.5 – 8.5
- C) 9.0 – 10.5
- D) 2.0 – 3.0

28. Which of the following is a carnivorous fish?

- A) Rohu
- B) Mrigal
- C) Magur (Clarias)
- D) Catla

29. Inland fisheries mainly include:

- A) Marine water fishing

- B) River, pond and lake fishing
- C) Deep-sea trawling
- D) Coral reef fishing

30. Which fish is also known as Indian Salmon?

- A) Catla
- B) Hilsa
- C) Rohu
- D) Rawas

31. Which of the following is used to increase oxygen level in fish ponds?

- A) Filter
- B) Paddle wheel aerator
- C) Thermometer
- D) pH meter

32. The process of breeding fish in controlled conditions is called:

- A) Fishing
- B) Hatchery
- C) Artificial propagation
- D) Angling

33. Which species is known for pearl production?

- A) Catlacatla
- B) Pinctada
- C) Cyprinus carpio
- D) Clarias batrachus

34. Which government scheme promotes integrated fish farming in India?

- A) Pradhan Mantri Matsya Sampada Yojana (PMMSY)
- B) National Aquatic Plan
- C) Kisan Credit Card Scheme

D) RashtriyaKrishiVikasYojana

35. Which fish is known as a bottom feeder?

- A) Catla
- B) Mrigal
- C) Rohu
- D) Hilsa

36. Which is a commonly used induced breeding hormone in fish farming?

- A) Auxin
- B) Oxytocin
- C) Ovaprim
- D) Gibberellin

37. Fishmeal is mainly used as:

- A) Fish medicine
- B) Pond fertilizer
- C) Animal feed
- D) Fish bait

38. Fish breathe through which organ?

- A) Lungs
- B) Spiracles
- C) Skin
- D) Gills

39. Aquaponics is a combination of:

- A) Fish farming and poultry
- B) Hydroponics and fish farming
- C) Sericulture and aquaculture

D) Apiculture and aquaculture

40. The term “fingerling” refers to:

- A) Adult fish
- B) Larval stage of fish
- C) Fish less than 2 cm in size
- D) Young fish about the size of a finger

41. The branch of biology, which involves the study of immune systems in all organisms is called_____.

- A) Zoology
- B) Microbiology
- C) Immunology
- D) Biotechnology

42. Which of the following immunity is obtained during a lifetime?

- A) Acquired immunity
- B) Active immunity
- C) Passive immunity
- D) None of the above.

43. How many types of antibodies are there?

- A) Five.
- B) Three.
- C) Two.
- D) Four.

44. Which of the following cells is involved in cell-mediated immunity?

- A) Leukaemia
- B) T cells
- C) Mast cells
- D) Thrombocytes

45. Which of the following protects our body against disease-causing pathogens?

- A) Respiratory system
- B) Immune system
- C) Digestive system
- D) Respiratory system

46. Hepatitis is an example of _____.

- A) Subunit Vaccine
- B) Killer Vaccine
- C) Toxoids Vaccine
- D) Recombinant Vaccine

47. Which of the following statements is true about the IgM of humans?

- A) IgM can cross the placenta
- B) IgM can protect the mucosal surface
- C) IgM is produced by high-affinity plasma cells
- D) IgM is primarily restricted in the circulation

48. Interferons are

- A) Cytokine barriers
- B) Physical barriers

C) Cellular barriers

D) Physiological barriers

49. Which of the following cells of the immune system do not perform phagocytosis?

A) Macrophage

B) Neutrophil

C) Eosinophil

D) Basophil

50. Monocytes differentiate into which kind of phagocytic cells?

A) Neutrophil

B) B cell

C) Macrophage

D) T cell

Model paper key

1. A
2. A
3. C
4. A
5. C
6. B
7. C
8. C
9. D
10. C
11. C
12. A
13. B
14. A
15. C
16. C
17. B
18. C
19. D
20. D

21. A
22. D
23. A
24. B
25. A
26. C
27. B
28. C
29. B
30. D
31. B
32. C
33. B
34. A
35. B
36. C
37. C
38. D
39. B
40. D
41. C
42. A
43. A
44. B
45. B
46. D
47. D
48. A
49. D
50. C