

HALF YEARLY EXAMINATION - 2023

Exam.No

Time : 3.00 Hours

XII - ZOOLOGY

Mark : 70

PART - I

Note: i) Answer all the questions.ii) Choose the best answer.

(15x1=15)

1. **Assertion (A) and Reason (R)**
 A-Head of the sperm consists of acrosome and mitochondria
 R-Acrosome contains spiral rows of mitochondria
 a) A and R are true, R is the correct explanation of A
 b) A and R are true, R is not the correct explanation of A
 c) A is true, R is false
 d) Both A and R are false
2. A marriage between a colour blind man and a normal woman produces
 a) All carrier daughters and normal sons
 b) 50% carrier daughters and 50% normal daughters
 c) 50% colourblind sons and 50% normal sons
 d) All carrier offsprings
3. Which of the following statements is not true about DNA replication in eukaryotes?
 a) Replication begins at a single origin of replication
 b) Replication is bidirectional from the origins
 c) Replication occurs at about 1 million base pairs per minute
 d) There are numerous different bacterial chromosomes, with replication occurring in each at the same time
4. **Find out true and false statements from the following.**
 i) Plasmodium vivax is a digenic parasite.
 ii) The life cycle of plasmodium involves 2 Phases namely, Schizogony, sporogony
 iii) The large Schizont shows yellowish-brown pigmented granules called Schuffners
 iv) Plasmodium infection leads to Lysis of white blood cells results in cycle of fever and other systems
 a) i) true ii) true iii) false iv) true
 b) i) true ii) true iii) false iv) false
 c) i) true ii) false iii) true iv) false
 d) i) false ii) true iii) false iv) true
5. Which one of the following are at high risk extinction due to habitat destruction
 a) Mammals b) Birds c) Amphibians d) Echinoderms
6. **Find out the correct pair.**
 A) Theory of Mutation - Huge de Vries
 B) Theory of Natural Selection - Henry Bastian
 C) Theory of inheritance of acquired characters - Lamarck
 D) Germplasm theory - Haldane
 a) A and D b) C and B c) A and C d) B and D
7. In agglutination and precipitation reactions, the antigen is a _____ and _____ respectively
 a) Whole cell / soluble molecule b) Soluble molecule / whole cell
 c) Bacterium / virus d) Protein / Antibody
8. The gases produced in anaerobic sludge digesters are
 a) Methane, Oxygen and hydrogen sulphide
 b) Hydrogen sulphide, methane and sulphur dioxide
 c) Hydrogen sulphide, nitrogen and methane
 d) Methane, hydrogen sulphide and CO₂
9. GEAC stands for
 a) Genome Engineering Action Committee
 b) Ground Environment Action Committee
 c) Genetic Engineering Approval Committee
 d) Genetic and Environment Approval Committee
10. **Match the following and choose the correct combination from the options given below.**
- | Types of Interaction | | Examples |
|----------------------|--------------|---|
| A | Parasitism | 1. Animals destroyed at the feet of elephants |
| B | Commensalism | 2. Ascaris and human |
| C | Amensalism | 3. Crocodile and bird |
| D | Mutualism | 4. Sucker fish on Shark |
- a) A-3, B-2, C-1, D-4
 b) A-2, B-4, C-1, D-3
 c) A-1, B-2, C-3, D-4
 d) A-2, B-3, C-4, D-1

11. Hologamy occurs in _____
 - a) Monocystis
 - b) Trichonympha
 - c) Actinophrys
 - d) Gall fly
12. Which one of the following groups includes sexually transmitted diseases caused by bacteria only?
 - a) Syphilis, gonorrhoea and candidiasis
 - b) Syphilis, chlamydia and gonorrhoea
 - c) Syphilis, gonorrhoea and trichomoniasis
 - d) Syphilis, pediculosis and trichomoniasis
13. Organisms which can survive a wide range of temperature are called
 - a) Ectotherms
 - b) Eurytherms
 - c) Endotherms
 - d) Stenotherms
14. The use of microorganism metabolism to remove pollutants such as oil spills in the water bodies is known as
 - a) Biomagnification
 - b) Bioreduction
 - c) Biomethanation
 - d) Bioremediation
15. Hershey and Chase in their experiment used radioactive isotopes of
 - a) Carbon & Hydrogen
 - b) Sulphur & Phosphorus
 - c) Nitrogen & Sulphur
 - d) Sulphur & Carbon

PART - II

Note: Answer any six questions. Question No.24 is compulsory. (6x2=12)

16. How is polyspermy avoided in humans?
17. Why tRNA is called an adapter molecule?
18. A patient was hospitalized with fever and chills. Merozoites were observed in her blood. What is your diagnosis?
19. Define the following terms. a) Antibiotics b) Zymology
20. What is Pedogenesis?
21. What are the factors that drive habitat loss?
22. What effect can fertilizer runoff have on an aquatic ecosystem?
23. What is Mayer - Rokitsansky Syndrome?
24. What is Cyclomorphosis?

PART - III

Note: Answer any six questions. Question No.33 is compulsory. (6x3=18)

25. Mention the importance of the position of the testes in humans.
26. During a Medical investigation, an infant was found to possess an extra chromosome 21. Describe the symptoms of the child is likely to develop later in the life.
27. State any three goals of the human genome project.
28. Differentiate between divergent evolution and convergent evolution with one example for each.
29. A 10 year old child is suffering from chicken pox. Is this infection good or bad? Give reason for your answer.
30. What is referred to as Biomagnification?
31. "Amazon forest is considered to be the lungs of the planet" - Justify this statement.
32. In a pond eco system many fishes share the same habitat. But their niches are different. Explain it with example.
33. Write the chief application of antigen - antibody reactions.

PART - IV

Note. Answer all the questions.

(5x5=25)

34. (a) Briefly explain the mechanism of fertilization and implantation in human beings.
(OR)
(b) Explain the anatomy of testis with help of a diagram.
35. (a) Comment on the methods of Eugenics.
(OR)
(b) Explain the salient features of Genetic code.
36. (a) Explain stabilizing, directional and disruptive selection with examples.
(OR)
(b) Explain the life cycle of Plasmodium in man.
37. (a) Explain the structure of immunoglobulin with suitable diagram.
(OR)
(b) What are the possible risks of GMOs?
38. (a) Describe Growth Models / Curves.
(OR)
(b) Explain the control and management of radioactive waste.