

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

23-0009-AA1 TEST BOOKLET

ZOOLOGY

(Time Allowed: 3 hours)

PAPER – I

(Maximum Marks: 300)

INSTRUCTIONS TO CANDIDATES

Read the instructions carefully before answering the questions: -

1. This Test Booklet consists of 12(twelve) pages and has 75 (seventy-five) items (questions).
2. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
3. Please note that it is the candidate's responsibility to fill in the Roll Number and other required details carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet and the Separate Answer Booklet. Any omission/discrepancy will render the OMR Answer Sheet and the Separate Answer Booklet liable for rejection.
4. Do not write anything else on the OMR Answer Sheet except the required information. Before you proceed to mark in the OMR Answer Sheet, please ensure that you have filled in the required particulars as per given instructions.
5. Use only Black Ball Point Pen to fill the OMR Answer Sheet.
6. This Test Booklet is divided into 4 (four) parts - Part - I, Part - II, Part - III and Part - IV.
7. All three parts are Compulsory.
8. Part-I consists of Multiple Choice-based Questions. The answers to these questions have to be marked in the OMR Answer Sheet provided to you.
9. Part-II, Part-III and Part-IV consist of Conventional Essay-type Questions. The answers to these questions have to be written in the separate Answer Booklet provided to you.
10. In Part-I, each item (question) comprises of 04 (four) responses (answers). You are required to select the response which you want to mark on the OMR Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
11. After you have completed filling in all your responses on the OMR Answer Sheet and the Answer Booklet(s) and the examination has concluded, you should hand over to the Invigilator *only the OMR Answer Sheet and the Answer Booklet(s)*. You are permitted to take the Test Booklet with you.
12. **Penalty for wrong answers in Multiple Choice-based Questions:**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE.
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to the question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.
 - (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

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PART - I
(Multiple Choice-based Questions)

Instructions for Questions 1 to 50:

- **Choose the correct answers for the following questions.**
- **Each question carries 3 marks.**

[3x50=150]

1. Which of the following statements about Protistans is true?
 - (a) Connecting link between plants and animals
 - (b) Connecting link between fungi and plants
 - (c) Connecting link between monerans and kingdoms of multi-cellular organisms
 - (d) Connecting link between fungi and animals
2. The phase of Plasmodium resistant to medicines is called -
 - (a) Pre-erythrocytic phase
 - (b) Post-erythrocytic phase
 - (c) Erythrocytic phase
 - (d) None of these
3. The continuous warm water current flowing through the body of Sponges helps in:
 - A. Nutrition
 - B. Reproduction
 - C. Respiration
 - (a) Only C
 - (b) B and C
 - (c) A and C
 - (d) All of the above
4. Which one of the following is absent in Coelenterates?
 - (a) Cnidoblasts
 - (b) Larval forms
 - (c) Metagenesis
 - (d) Coelom
5. Larvae with hooks are found in which class of Platyhelminthes?
 - (a) Cestoda
 - (b) Trematoda
 - (c) Turbellaria
 - (d) Hirudinea
6. Male Ascaris can be distinguished from female Ascaris by the presence of:
 - (a) Oral Suckers
 - (b) Lips
 - (c) Curved posterior end with a pair of pineal setae
 - (d) Blunt posterior end

7. Which among the following is a function of typhlosome?
(a) Aids in excretion
(b) Aids in digestion
(c) Increases area of absorption
(d) Helps in copulation
8. The saliva of Cockroaches contains -
(a) Amylase
(b) Lipase
(c) Pepsin
(d) Chitinase
9. Mollusca have -
(a) Cellular grade of organization
(b) Tissue grade of organization
(c) Organ grade of organization
(d) System grade of organization
10. The body of Mollusca is devoid of -
(a) Head
(b) Shell
(c) Eyes
(d) Segmentation
11. Which of the following is not applicable to Echinoderms?
(a) Triploblastic
(b) Oral and aboral surfaces
(c) Cephalization
(d) Deuterostomes
12. All Chordate characters are present in the larva but absent in adults of -
(a) Herdmania
(b) Petromyzon
(c) Amphioxus
(d) Oikopleura
13. Which of the following does Amphioxus lack?
(a) Heart
(b) Liver
(c) Solenocytes
(d) Atrium
14. Which one of the following is a true fish?
(a) Silverfish
(b) Crayfish
(c) Flying fish
(d) Devilfish

15. Catadromous fish migrates from:
- (a) River to Sea
 - (b) Sea to River
 - (c) River to the estuary
 - (d) Estuary to sea
16. Amphibians originated during which of these eras?
- (a) Ordovician period of the Paleozoic era
 - (b) Devonian period of the Paleozoic era
 - (c) Carboniferous period of the Paleozoic era
 - (d) Mesozoic era
17. Which of the following is not applicable to Sphenodonts?
- (a) Endemic to New Zealand
 - (b) Tuatara
 - (c) Living fossil
 - (d) No sexual dimorphism
18. The longest annual migration is covered by -
- (a) Wagtails
 - (b) Hoopoes
 - (c) Flamingos
 - (d) Artic terns
19. The largest and most powerful flight muscle is -
- (a) Pectoralis major
 - (b) Pectoralis minor
 - (c) Coracobrachialis major
 - (d) Coracobrachialis minor
20. Which of these is the only poisonous mammal?
- (a) Duck-billed platypus
 - (b) Opossum
 - (c) Hedgehog
 - (d) Sloth
21. Prototherians are egg-laying mammals and their eggs are -
- (a) Alecithal
 - (b) Mesolecithal
 - (c) Microlecithal
 - (d) Megalecithal
22. Synthesis and secretion of estrogen by ovary requires which of the following?
- (a) FSH
 - (b) LH
 - (c) Both FSH and LH
 - (d) None of the above

23. Stratum corneum is lacking in the epidermis of -
(a) Elasmobranchs
(b) Teleosts
(c) Dipnoi
(d) All of these
24. Which of the following do Amphibians lack?
(a) Salivary glands
(b) Rectal glands
(c) Caecum
(d) All of these
25. Energy dissipation is higher in which of the following plants/animals?
(a) Terrestrial plants
(b) Terrestrial animals
(c) Aquatic plants
(d) Aquatic animals
26. What is the number of Biosphere reserves in India?
(a) 10
(b) 15
(c) 17
(d) 25
27. A Biodiversity Hotspot is a region with a high level of:
(a) Endemic species
(b) Rare species
(c) Threatened species
(d) All of these
28. Which of the following institutions is the world's largest financier of Biodiversity?
(a) UNESCO
(b) World Bank
(c) WHO
(d) IUCN
29. Which of the following statements about organochlorines is/are true?
(a) They are present in the soil
(b) Bioaccumulates in fat
(c) Magnify through food chains
(d) All of these
30. Anaerobic respiration occurs in which of these?
(a) Paramecium
(b) Taenia
(c) Polygordius
(d) Balanoglossus

31. In which one of the following only the right lung is present?
- (a) Sphenodon
 - (b) Snakes
 - (c) Penguins
 - (d) Seals
32. Which of these do Snakes lack?
- (a) Tympanum
 - (b) Eustachian tube
 - (c) Both Eustachian tube and Tympanum
 - (d) Bone conduction
33. The electric organs vary in -
- (a) Location and size
 - (b) Physiology
 - (c) Evolution and origin
 - (d) All of the above
34. Development of mouth later than the anus is the condition called -
- (a) Branchiostomatic
 - (b) Schizostomatic
 - (c) Deutrostomatic
 - (d) Protostomatic
35. Besides Annelida and Arthropoda metamerism is also found in -
- (a) Cestoda
 - (b) Acanthocephala
 - (c) Chordata
 - (d) Mollusca
36. The common larva of Sponges is -
- (a) Tadpole
 - (b) Planula
 - (c) Placula
 - (d) Parenchymula
37. Flat worms are: -
- (a) Diploblastic
 - (b) Triploblastic
 - (c) Monoblastic
 - (d) None of the above
38. Which of these is the major excretory product of Arthropods?
- (a) Ammonia
 - (b) Urea
 - (c) Uric Acid
 - (d) Trimethylamine oxide

39. In Paramecium undigested food is passed out through the -
(a) Vestibule
(b) Cytopharynx
(c) Cytopyge
(d) Cytostome
40. Hydra can digest all types of food except -
(a) Protein
(b) Carbohydrates
(c) Fats
(d) Starch
41. Which of the following statements about Obelia is correct?
(a) They do not have gastric pouches
(b) Oral arms are absent in obelia
(c) Gastric Filaments are not present in obelia
(d) All of the above
42. Which is the connecting link between Fishes and Amphibians?
(a) Cat fish
(b) Gambusia
(c) Protopterus
(d) Cluptea
43. Vertebral Column is derived from
(a) Dorsal Nerve cord
(b) Ventral Nerve Cord
(c) Outgrowth of Cranium
(d) Notochord
44. Which of the following is lacking in the drones of Honey bees?
(a) Sting
(b) Salivary Glands
(c) Wax Glands
(d) All of these
45. In which year was Project Tiger launched?
(a) 2004-2005
(b) 1983-1984
(c) 2013-2014
(d) 1973-1974
46. Placing of the threatened animals and plants in a special case unit for protection is called-
(a) Ex-situ conservation
(b) In – situ conservation
(c) Wildlife sanctuary
(d) National Park

47. In which year was the Wildlife Protection Act implemented in India?

- (a) 1952**
- (b) 1962**
- (c) 1972**
- (d) 1982**

48. In which of the following states is Simlipal Bio-Reserve located?

- (a) Punjab**
- (b) Delhi**
- (c) Orissa**
- (d) West Bengal**

49. Cyclic migrations are shown by

- (a) Snowy Owls**
- (b) House sparrows**
- (c) Cranes**
- (d) Cotton teals**

50. The dancing language in Honeybees is applicable between the -

- (a) Queen and Drone**
- (b) Worker and Drone**
- (c) Worker and Worker**
- (d) Queen, Drone and Worker**

PART - II
(Short Answer-type Questions)

Instructions for Questions 51 to 63:

- ***Write the answers in short for any 10 (TEN) out of the thirteen questions.***
- ***Each question carries 5 marks.*** ***[5x10=50]***

51. What is the function of the contractile vacuole?
52. List the general features of Aurelia.
53. Define Torsion? Describe the process in Pila.
54. Write a short note on Gemmule along with a diagram.
55. Explain book lungs with an example diagram.
56. Write a short note on Glochidium larva.
57. Describe the flight adaptations in birds.
58. Write a short note on Project Tiger.
59. Explain the role of Pheromones in alarm spreading.
60. What is reciprocal altruism? Elucidate.
61. Write a short note on pests of sugarcane.
62. Describe Chi-square test with examples.
63. What is FISH and Chromosome painting?

PART - III
(Long Answer-type Questions)

Instructions for Questions 64 to 71:

- *Answer any 5 (FIVE) out of the eight questions.*
- *Each question carries 10 marks.*

[10x5=50]

64. Give the general characteristics of phylum Mollusca and classify it up to sub class.
65. Differentiate between Obelia Polyp and Obelia Medusa. Draw suitable diagrams.
66. Describe the digestive system of Herdmania. Draw suitable diagrams.
67. Describe the parasitic adaptations in Ascaris.
68. Explain the parental care in Amphibia.
69. Elaborate the general features of egg-laying mammals.
70. Describe the vector, pathogen and prevention of Tuberculosis.
71. Define student t-test. Explain with suitable examples.

PART - IV
(Essay-type Questions)

Instructions for Questions 72 to 75:

- *Answer any 2 (TWO) out of the four questions.*
- *Each question carries 25 marks.*

[25x2= 50]

72. Describe the general features and life history of Nereis.
 73. Give a comparative account of the heart and circulatory system of Vertebrates.
 74. What is biological clock? Explain the phenomenon of biological clocks in animals in detail.
 75. What is Gel-Electrophoresis? Explain the process in detail.
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