

Question Booklet No. :

ENTRANCE TEST-2025

SCHOOL OF BIOLOGICAL SCIENCES

ZOOLOGY

Total Questions : 60

Question Booklet Series **A**

Time Allowed : 70 Minutes

Entrance Test Roll No. :

Important Instructions for Candidates :

1. Candidates shall compulsorily use only **blue/ black ball point pen**. In no case gel/ink pen or pencil should be used.
2. Compulsorily write your **entrance test roll number** in the space provided at the top of this page of the question booklet.
3. Fill up the necessary information in the spaces provided on OMR Answer Sheet including **Question Booklet Number** and **Question Booklet Series**.
4. OMR Answer Sheet has an original copy and a candidate's copy glued beneath it at the top. While making entries in the original copy, candidate should ensure that the **two copies are aligned properly** so that the entries made in the original copy against each item are exactly copied in the candidate's copy.
5. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
6. **Choose only one correct/most appropriate response** for each question among the options A, B, C and D and darken the circle of the appropriate response completely. Incompletely darkened circle is not correctly read by the OMR scanner and no complaint to this effect shall be entertained.
7. **Do not darken more than one circle of option for any question. A question with more than one darkened response shall be considered wrong.**
8. **There will be negative marking for wrong answers. Each wrong answer will lead to deduction of 0.25 marks per wrong answer from the score.**
9. Only those candidates who obtain positive score in Entrance Test shall be eligible for admission.
10. Do not make any stray mark on the OMR sheet as this may lead to errors while scanning.
11. OMR answer sheet must be handled carefully and it should not be folded or mutilated, as in such case it will not be properly evaluated by the scanning machine.
12. Use of Electronic gadgets like calculator, mobile, smart watch, blue tooth etc. is strictly prohibited.
13. Rough work, if any, should be done on the blank sheets provided with the question booklet.
14. Ensure that the OMR Sheet is signed by the Examinee as well as by the invigilator.
15. At the end of the examination, fold the OMR Sheet along the crease on the top and tear off the top strip to separate the Original OMR Sheet from the Duplicate Copy.
16. Compulsorily hand over the **Original OMR Answer Sheet** to the invigilator.
17. Candidate's can retain duplicate copy of the OMR, Question Booklet and Admit Card.
18. If any of the information in the Response Sheet/Question Paper has been found missing or not mentioned as stated above, the candidate is solely responsible for that lapse.
19. Any deficiency on the OMR shall be the responsibility of the candidate himself/herself.

1. The body cavity of Coelenterates is called:
 - (A) Coelom
 - (B) Pseudocoelom
 - (C) Both (A) and (B)
 - (D) None of the above
2. How many proglottids are found in adult *Taenia solium*?
 - (A) 1000
 - (B) 1000-2000
 - (C) 2000
 - (D) 2000-3000
3. Which of the following protozoans perform locomotion through ciliary movements?
 - (A) *Balantidium, Paramecium, Vorticella*
 - (B) *Euglena, Lophomonas, Entamoeba*
 - (C) *Amoeba, Paramecium, Euglena*
 - (D) *Trichonympha, Vorticella, Lophomonas*
4. Which cells are involved in food reserve and nutrient storage in sponges among the following?
 - (A) Choanocytes
 - (B) Amoebocytes
 - (C) Collencytes
 - (D) Thesocytes
5. Which one of the following is not a characteristic of phylum Arthropoda?
 - (A) Haemocoelom
 - (B) Ventral nerve cord
 - (C) Metameric segmentation
 - (D) Closed circulatory system
6. True coelom, segmentation and closed circulatory system are characteristic of phylum:
 - (A) Arthropoda
 - (B) Annelida
 - (C) Mollusca
 - (D) Echinodermata
7. The paurometabolous development is found in:
 - (A) Housefly
 - (B) Grasshopper
 - (C) Mayfly
 - (D) Silverfish
8. Which of the following is not a characteristic feature of Echinoderms?
 - (A) Cephalization
 - (B) Water vascular system
 - (C) Enterocoelous coelom with mesodermal derived archenteron
 - (D) Poorly developed circulatory system
9. Which of the following statement is true about Elasmobranchs?
 - (A) Skeleton is made up of cartilage
 - (B) Five to seven gill openings on each side
 - (C) Placoid scales are present
 - (D) All of the above
10. Which of the following belongs to Cephalochordata?
 - (A) Herdmania
 - (B) Jellyfish
 - (C) Amphioxus
 - (D) Sea urchin
11. The excretion of salt is carried out by osmoregulators through:
 - (A) Gills
 - (B) Bladder
 - (C) Fins
 - (D) Scales
12. A tunicate, marine invertebrate belongs to the sub-phylum:
 - (A) Hemichordata
 - (B) Urochordata
 - (C) Cephalochordata
 - (D) Protochordata

13. The thoracic and abdominal cavity are separated by a muscular diaphragm in:
- (A) Fishes
 - (B) Lizards
 - (C) Crocodiles
 - (D) Birds
14. Which of the following structural modification adds to the length of the forearm in birds ?
- (A) Humerus
 - (B) Radius
 - (C) Ulna
 - (D) Carpometacarpus
15. In some insects, the filter chamber is a modification to:
- (A) Conserve water
 - (B) Remove excess fluid
 - (C) Digest proteins
 - (D) Digest fats
16. Among poisonous snakes superior labial or parotid glands are modified into:
- (A) Poison glands
 - (B) Poison ducts
 - (C) Fangs
 - (D) Poison muscles
17. The hairs in mammals are the derivatives of:
- (A) Epidermis
 - (B) Endodermis
 - (C) Dermis
 - (D) Mesodermis
18. The organs of respiration in prawn are:
- (A) Gills
 - (B) Trachea
 - (C) Lungs
 - (D) Book lungs
19. In man, the sour taste receptors are found on:
- (A) Tip of the tongue
 - (B) Tip and sides of the tongue
 - (C) Along the lateral edges of the tongue
 - (D) At the base of the tongue
20. The place for collection of venous blood in primitive vertebrate heart is:
- (A) Atrium
 - (B) Sinus venosus
 - (C) Ventricle
 - (D) None of the above
21. The erythrocytes are nucleated in:
- (A) Mammals
 - (B) Man
 - (C) Camel
 - (D) None of the above
22. "The tube within a tube" body organization is found in:
- (A) Arthropoda
 - (B) Annelida
 - (C) Porifera
 - (D) Mollusca
23. Approximately, how many nerve cells are present in a human brain:
- (A) 1 million
 - (B) 10 million
 - (C) 10 billion
 - (D) 100 billion
24. The upper part of an aquatic ecosystem contains:
- (A) Sharks
 - (B) Plankton
 - (C) Benthos
 - (D) Both (A) and (B)

25. Embryo reaches into the uterus from the fallopian tube in about:
- (A) 24 hours
 - (B) Two days
 - (C) Seven days
 - (D) 3 weeks
26. When the yolk particles are present in little amount and are fairly evenly distributed throughout the cytoplasm, the egg is known as:
- (A) Oligolecithal
 - (B) Telolecithal
 - (C) Centrolecithal
 - (D) Macrolecithal
27. Which of the following contains diploid number of chromosomes ?
- (A) Primary spermatocyte
 - (B) Secondary spermatocyte
 - (C) Spermatid
 - (D) Spermatozoan
28. Which of the following type of placenta is found in human beings ?
- (A) Epitheliochorial
 - (B) Endotheliochorial
 - (C) Haemochorial
 - (D) All of the above
29. Which of the following is odd one ?
- (A) Lipase
 - (B) Maltase
 - (C) Lactase
 - (D) Sucrase
30. Trypsin has highest activity of protein digestion at pH of:
- (A) pH 6
 - (B) pH 8
 - (C) pH 10
 - (D) pH 12
31. Plenty of water is required for the excretion of:
- (A) Ammonia
 - (B) Urea
 - (C) Uric acid
 - (D) All of the above
32. The most common vertebrate respiratory pigment is:
- (A) Haemoglobin
 - (B) Haemocyanin
 - (C) Pinnaglobin
 - (D) Vanadium
33. A muscle unable to undergo a sustained contraction is:
- (A) Cardiac muscle
 - (B) Skeletal muscle
 - (C) Visceral muscle
 - (D) None of the above
34. Which of the following has receptors for hearing ?
- (A) Ampulla
 - (B) Vestibule
 - (C) Macula
 - (D) Organ of corti
35. During vision, a bundle of nerve fibres carrying electrical impulses from the retina to the brain is called:
- (A) Optic nerve
 - (B) Choroid
 - (C) Ciliary body
 - (D) None of the above
36. What effect does high concentrations of carbon dioxide have on haemoglobin and blood ?
- (A) An increase in blood pH
 - (B) A decrease in blood pH
 - (C) Haemoglobin picking up more oxygen
 - (D) No effect on haemoglobin

37. When one or more pairs of spiracles totally disappear from the usual 10 pairs in insects, the arrangement is termed as:
- Apneustic
 - Holopneustic
 - Hemipneustic
 - Hypopneustic
38. The pineal gland is located in:
- On kidney
 - Beneath the thymus gland
 - Beneath the thyroid gland
 - In the brain
39. Deficiency of vasopressin hormone causes:
- Diabetes insipidus
 - Diabetes mellitus
 - Gestational diabetes
 - Addison's disease
40. A distinct group of organisms which can be assigned to a definite category at any level of a hierarchic classification is called:
- Phenon
 - Category
 - Taxon
 - All of the above
41. The main source of ATP in a cell is:
- Glycolysis
 - Krebs cycle
 - Electron Transport System (ETS)
 - Pyruvate oxidation
42. The presence of peroxide-producing enzymes is the characteristic feature of:
- Lysosomes
 - Peroxisomes
 - Spherosomes
 - All of the above
43. Which of the following taxonomic characters cannot be studied in preserved material ?
- DNA
 - Protein
 - Egg structure
 - Behavior
44. The end product of Ornithine cycle is:
- Ammonia
 - Urea
 - Uric acid
 - Carbon dioxide
45. The tendency of linked genes to remain together during the process of inheritance is called:
- Linkage
 - Synapses
 - Crossing over
 - Terminalization
46. The process of transferring and immobilizing DNA onto a membrane after restriction enzyme digestion and electrophoresis is called:
- W-blotting
 - N-blotting
 - S-blotting
 - All of the above
47. Which of the following is the most familiar sex-linked character ?
- Haemophilia
 - Red-green colour blindness
 - Congenital night blindness
 - All of the above
48. The enzyme used in making cDNA Library is known as:
- Taq polymerase
 - Reverse transcriptase
 - DNA polymerase
 - RNA polymerase

49. The smallest segment of DNA responsible for genetic mutation is:
- Cistron
 - Mutan
 - Recon
 - None of the above
50. DNA replication in most prokaryotic cells is:
- Unidirectional
 - Bidirectional
 - Conservative
 - All of the above
51. Which gene is commonly used in the study of DNA barcoding and phylogeny of animal phyla ?
- Mitochondrial gene
 - Nuclear gene
 - Ribosomal gene
 - Mutant gene
52. The temperature-dependant sex determination is found in:
- Reptiles and teleost fish
 - Fishes and amphibians
 - Both (A) and (B)
 - None of the above
53. Animals defend their territory against:
- Predator
 - Any intruder
 - Intruder of another species
 - Intruder of same species
54. Archaeopteryx is a connecting link between:
- Amphibians and Reptiles
 - Reptiles and Mammals
 - Reptiles and Birds
 - Birds and Mammals
55. The immune system which works against self is:
- Self-immune system
 - Specific immunity
 - Auto-immunity
 - None of the above
56. A unit of evolutionary morphological change equal to one standard deviation per generation is called:
- Darwin
 - Haeckel
 - Von Baer
 - Haldane
57. Who finalized the biological species concept ?
- Carolus Linnaeus
 - Aristotle
 - Theophrastus
 - Ernst Mayr
58. Morphologically similar and reproductively isolated species are termed as:
- Sympatric species
 - Sibling species
 - Allopatric species
 - Parapatric species
59. Which of the following is the most important factor for splitting up of the species and establishing a new species ?
- Adaptation
 - Climate
 - Heredity
 - Isolation
60. What was the largest of the known mass extinctions of life on earth ?
- Ordovician-Silurian
 - Devonian
 - Permian-Triassic
 - Triassic-Jurassic

ROUGH WORK

ROUGH WORK

Sr. No.1421

ENTRANCE TEST-2024

SCHOOL OF BIOLOGICAL SCIENCES

ZOOLOGY

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series **A**

Roll No. :

Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

SP-4490-A

SEAL

1. The route followed by the water current in ascon type canal system include :
 - (A) Osculum → spongocoel → ostia
 - (B) Ostia → spongocoel → osculum
 - (C) Spongocoel → ostia → osculum
 - (D) Osculum → ostia → spongocoel
2. Canal system is absent in :
 - (A) *Leucosolenia*
 - (B) *Euplectella*
 - (C) *Plakina*
 - (D) None of the above
3. *Taenia solium* belong to the taxon :
 - (A) Cestoda
 - (B) Trematoda
 - (C) Nematoda
 - (D) Acanthocephala
4. Which of the following is paired correctly ?
 - (A) Scyphozoa : Coelenterata
 - (B) Sporozoa : Coelenterata
 - (C) Telospora : Coelenterata
 - (D) Telospora : Acanthocephala
5. Which of the following is not a characteristic feature of most members of the phylum Annelida ?
 - (A) Pseudocoelom
 - (B) Open circulatory system
 - (C) Both (A) and (B)
 - (D) None of the above
6. Which of the following developmental stage is wanting in hemimetabolous insects ?
 - (A) Egg
 - (B) Larva
 - (C) Pupa
 - (D) Adult
7. Radially symmetrical true coelomates with complete digestive system belong to phylum :
 - (A) Arthropoda
 - (B) Annelida
 - (C) Porifera
 - (D) None of the above
8. The water vascular system of echinoderms :
 - (A) Functions as a circulatory system that distributes nutrients to the body cells
 - (B) Functions in locomotion, feeding and gas exchange
 - (C) Both (A) and (B)
 - (D) None of the above
9. Which of the following is correctly matched ?
 - (A) Larvacea : Cephalochordata
 - (B) Larvacea ; Urochordata
 - (C) Larvacea : Echinodermata
 - (D) None of the above
10. Amphioxus belong to which taxon ?
 - (A) Cephalochordata
 - (B) Urochordata
 - (C) Chordata
 - (D) Vertebrata

11. Which of the following statements is correct ?
 (A) *Myxine* is commonly called hagfish
 (B) *Myxine* belong to cyclostomata
 (C) *Myxine* body is eel like
 (D) All of the above
12. Sting ray and Eagle ray belong to :
 (A) Rajiformes
 (B) Amiiiformes
 (C) Rajiformes and Amiiiformes respectively
 (D) Amiiiformes and Rajiformes respectively
13. Which of the following is not an amphibian ?
 (A) Proteus
 (B) Triton
 (C) Salamandra
 (D) Typhlops
14. Patagia is a characteristic feature of :
 (A) Bufo
 (B) Rana
 (C) Draco
 (D) Iguana
15. Common crow belongs to order :
 (A) Piciformes
 (B) Passeriformes
 (C) Cuculiformes
 (D) None of the above
16. Prototheria, a group of egg laying organisms, belong to class :
 (A) Reptilia
 (B) Aves
 (C) Mammalia
 (D) Amphibia
17. Which of the following is a part of integumentary system ?
 (A) Skin, hair and nails
 (B) Oil and sweat glands
 (C) Sensory receptors
 (D) All of the above
18. Stem cells are present in which layer of the epidermis ?
 (A) Stratum basale
 (B) Stratum spinosum
 (C) Stratum lucidum
 (D) Stratum corneum
19. Cecum is well developed in :
 (A) Herbivores
 (B) Carnivores
 (C) Top carnivores
 (D) None of the above
20. Total number of lobes in human lungs (right and left lung) are :
 (A) 4
 (B) 5
 (C) 6
 (D) 7
21. Which of the following has a three chambered heart ?
 (A) Crocodiles
 (B) Dolphins
 (C) Salamanders
 (D) Birds

22. Juxtamedullary nephrons are present in the kidneys of :
- Mammals
 - Aves
 - Both (A) & (B)
 - None of the above
23. A collection of neuron cell bodies outside the CNS is termed as :
- Hillock
 - Ganglion
 - Synapse
 - Nerve fibre
24. Neurons which conduct impulses from thalamus to the primary somatosensory area are termed as :
- First order neurons
 - Second order neurons
 - Third order neurons
 - Fourth order neurons
25. Which of the following types of cleavages is associated with egg/embryos having large quantities of yolk ?
- Equal holoblastic
 - Unequal holoblastic
 - Meroblastic
 - None of the above
26. Which of the following does develop from mesoderm ?
- Blood
 - Bone
 - Muscle
 - All of the above
27. Which of the following is a correct sequence of early stages of embryonic development ?
- Zygote, blastula, morula, gastrula and neurula
 - Zygote, morula, blastula, gastrula and neurula
 - Zygote, morula, neurula, blastula and gastrula
 - Zygote, neurula, morula, blastula and gastrula
28. Which of the following groups of organisms are radially symmetrical deuterostomes ?
- Echinodermates and chordates
 - Echinidermates and arthropods
 - Chordates and hemichordates
 - None of the above
29. After surgical removal of infected gall bladder, a person must be especially careful to restrict his/her dietary intake of :
- Starch
 - Protein
 - Fat
 - Glycogen
30. Which of the following enzymes has the lowest pH optimum ?
- Salivary amylase
 - Pancreatic amylase
 - Trypsin
 - Pepsin
31. Which of the following opposes ultra-filtration ?
- Blood solute potential
 - Glomerular filtrate pressure
 - Both (A) & (B)
 - None of the above

32. In mammals, CO_2 is mainly transported as :
- Hb. CO_2
 - Bicarbonate ions
 - Dissolved in plasma
 - Carboxy-haemoglobin
33. Pulse is a direct measure of :
- Blood pressure
 - Cardiac output
 - Heart rate
 - Breathing rate
34. In comparison to the cones, the rods are more :
- In fovea
 - Sensitive to dim light
 - Important for colour vision
 - All of the above
35. Which of the following sensory receptors is correctly paired with its category :
- Hair cell : mechanoreceptor
 - Olfactory receptor : electromagnetic receptor
 - Both (A) and (B)
 - None of the above
36. During the contraction of a vertebrate skeletal muscle fibre, calcium ions :
- Break cross-bridges by acting as a cofactor in the hydrolysis of ATP
 - Bind with troponin, changing its shape so that myosin binding sites on actin are exposed
 - Transmit action potentials from motor neurons to the muscle fibre
 - All of the above
37. The main target for tropic hormones are :
- Muscles
 - Blood vessels
 - Both (A) and (B)
 - None of the above
38. Adrenal cortex produces :
- Epinephrine and norepinephrine
 - Glucocorticoids and mineralocorticoids
 - PTH and ACTH
 - All of the above
39. Which of the following is a steroid hormone ?
- Androgen and progesterone
 - Estrogen and progesterone
 - Glucocorticoids and mineralocorticoids
 - All of the above
40. Which of the following is the most likely explanation for hypothyroidism in a patient whose iodine level is normal ?
- A disproportionate production of T_3 and T_4
 - Hypo-secretion of TSH
 - Hyper-secretion of TSH
 - None of the above
41. Which of the following compounds is not an intermediate in TCA cycle ?
- Phosphoglycerate
 - Malate
 - Fumarate
 - Oxaloacetate

42. Hexokinase enzyme is inhibited by :
- (A) ATP
 - (B) Glucose 6-phosphate
 - (C) 3-Phosphoglycerate
 - (D) 2- Phosphoglycerate
43. Oxidation of fatty acids occurs in :
- (A) Cytoplasm
 - (B) Peroxisomes
 - (C) Mitochondria
 - (D) Lysosomes
44. Which of the following amino-acids participate in transamination ?
- (A) Lysine
 - (B) Threonine
 - (C) Proline
 - (D) None of the above
45. In *Pisum sativum*, the genes for the seven characters chosen by Mendel are located on :
- (A) Four chromosomes
 - (B) Five chromosomes
 - (C) Six chromosomes
 - (D) Seven chromosomes
46. Which of the following ratio shows complementary gene interaction ?
- (A) 9:3:3:1
 - (B) 13:3
 - (C) 15:1
 - (D) 9:7
47. Phenotype controlled by the genome of one's mother rather than one's own genome exemplifies :
- (A) Maternal effect
 - (B) Maternal inheritance
 - (C) Infectious inheritance
 - (D) All of the above
48. ABO blood grouping in humans exemplifies :
- (A) Codominance & incomplete dominance
 - (B) Incomplete dominance & hypostasis
 - (C) Codominance & complete dominance
 - (D) Incomplete dominance only
49. Turner syndrome and Klinefelter syndrome is associated with abnormal number of :
- (A) Autosomes
 - (B) Y chromosomes
 - (C) X chromosomes
 - (D) X and Y chromosome respectively
50. DNA replication in prokaryotes and eukaryotes is :
- (A) Conservative & semiconservative respectively
 - (B) Semiconservative & conservative respectively
 - (C) Dispersive & semiconservative respectively
 - (D) None of the above
51. Which of the following serve as an 'anticodon' for the genetic codon 'UAA' ?
- (A) AUU
 - (B) TUU
 - (C) Both (A) & (B)
 - (D) None of the above

52. In ZZ-ZW mechanism of sex determination, males are :
- Homogametic
 - Heterogametic
 - Sterile
 - Sub-fertile
53. Which of the following pairs of structures is least likely to represent homology :
- Wings of a bat and forelimbs of a man
 - Haemoglobin of a baboon and that of a gorilla
 - Mitochondria of a plant and that of an animal
 - Wings of bird and those of an insect
54. Natural selection changes allele frequency in populations because some _____ survive and reproduce more successfully than others.
- Individual organisms
 - Species
 - Alleles
 - Genes
55. No two humans are alike except for identical twins. The chief cause of variation among individuals is :
- New mutation that occurred in preceding generation
 - Environmental effect
 - Sexual recombination
 - Genetic drift
56. Sparrows with average sized wings survive severe storms better than those with longer or shorter wings, illustrating :
- Frequency dependent selection
 - Stabilizing selection
 - Disruptive selection
 - Bottleneck effect
57. Biological species concept was proposed by :
- Charles Darwin
 - Ernst Mayr
 - Theodosius Dobzhansky
 - G.G. Simpson
58. The term speciation was coined by :
- Orator F. Cook
 - Darwin
 - Linnaeus
 - George Cuvier
59. Populations isolated by physical barriers will lead to :
- Allopatric speciation
 - Sympatric speciation
 - Parapatric speciation
 - None of the above
60. Which of the following factors would not contribute to allopatric speciation ?
- A population becomes geographically isolated from the parent population
 - The separated population is small and genetic drift occurs
 - Gene flow between the two populations is extensive
 - The isolated population faces different selection pressure than the ancestral population