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ROLL No.

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TEST BOOKLET No.

316

TEST FOR POST GRADUATE PROGRAMMES

ZOOLOGY

Time: 2 Hours

Maximum Marks: 450

INSTRUCTIONS TO CANDIDATES

1. You are provided with a Test Booklet and an Optical Mark Reader (OMR) Answer Sheet to mark your responses. Do not soil the Answer Sheet. Read carefully all the instructions given on the Answer Sheet.
 2. Write your Roll Number in the space provided on the top of this page.
 3. Also write your Roll Number, Test Code, and Test Subject in the columns provided for the same on the Answer Sheet. Darken the appropriate bubbles with a Ball Point Pen.
 4. The paper consists of 150 objective type questions. All questions carry equal marks.
 5. Each question has four alternative responses marked A, B, C and D and you have to darken the bubble fully by a Ball Point Pen corresponding to the correct response as indicated in the example shown on the Answer Sheet.
 6. Each correct answer carries 3 marks and each wrong answer carries 1 minus mark.
 7. Space for rough work is provided at the end of this Test Booklet.
 8. You should return the Answer Sheet to the Invigilator before you leave the examination hall. However, you can retain the Test Booklet.
 9. Every precaution has been taken to avoid errors in the Test Booklet. In the event of any such unforeseen happenings, the same may be brought to the notice of the Observer/Chief Superintendent in writing. Suitable remedial measures will be taken at the time of evaluation, if necessary.
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ZOOLOGY

1. Sun is the source of energy for
 - (A) heterotrophs
 - (B) autotrophs
 - (C) saprophytes
 - (D) chemotrophs

2. Cetaceans respire through
 - (A) mouth
 - (B) gills
 - (C) skin
 - (D) blow holes

3. Microscope that can give you highest magnification is
 - (A) Transmission Electron
 - (B) Scanning Electron
 - (C) Phase Contrast
 - (D) Interference

4. Cross connections between the cell walls are known as
 - (A) nucleopores
 - (B) plasmodesmata
 - (C) telomere
 - (D) kinetochore

5. Antibodies are
 - (A) polysaccharides
 - (B) proteins
 - (C) lipoproteins
 - (D) mucoproteins

6. Lungs extend into air-sacs in
 - (A) mammals
 - (B) reptiles
 - (C) birds
 - (D) insects

7. *Physalia* sp. is known as
 - (A) Portugese Soldier
 - (B) Gaint Reef
 - (C) Portuguese Man of War
 - (D) Devil Sponge



8. Bowman's capsule is found in
- (A) lungs (B) kidneys
(C) eyes (D) ovary
9. State animal of Kerala is
- (A) Bison (B) Elephant
(C) Tiger (D) Leopard
10. In bones, the mineral present in large quantities is
- (A) iron (B) potassium
(C) calcium (D) sodium
11. Dipnoi are known as
- (A) bony fishes (B) cartilaginous fishes
(C) holocephalii (D) lung fishes
12. Which of the following is not caused by recessive genes?
- (A) Huntington disorder (B) Haemophilia
(C) Colour blindness (D) Phenylketonuria
13. Tusks in elephants is a modification of
- (A) canines (B) incisors
(C) pre-molars (D) maxilla
14. In man, the causative agent of chronic type of sleeping sickness is
- (A) *Trypanosoma gambiense* (B) *Trypanosoma rhodesiense*
(C) *Trypanosoma brucei* (D) *Trypanosoma evansi*
15. Testes of earth worm are present in
- (A) 7-10th segments (B) 13 and 14th segments
(C) 11 and 12th segments (D) 13-18th segments



16. Sea cucumber belongs to the class
- (A) Holothuria (B) Asteroidea
(C) Crinoidea (D) Echinoidea
17. In sponges, the food is stored in
- (A) desmocytes (B) archeocytes
(C) choanocytes (D) thesocytes
18. Which animal is the main attraction in Assam's Kaziranga National Park?
- (A) Zebra (B) Giraffe
(C) Black lion (D) The one-horned rhinoceros
19. Which one of the following groups is represented only by extinct forms?
- (A) Anura (B) Labrynthodontia
(C) Urodela (D) Crocadelia
20. Ingestion of solid particles by cells is known as
- (A) Phagocytosis (B) Pinocytosis
(C) Osmosis (D) Import
21. Endostyle in tunicates is part of
- (A) respiratory system (B) excretory system
(C) alimentary system (D) nervous system
22. Placenta in marsupials is
- (A) pouch (B) yolk sac
(C) absent (D) vestigial



23. The horn of Rhinoceros is a modification of
- (A) skull bone (B) upper lip
(C) hair (D) nose
24. Anapsid skull is found in
- (A) chelonea (B) ophedia
(C) crocodiles (D) lizards
25. Among molluscs, ink gland is seen in
- (A) Gastropoda (B) Cephalopoda
(C) Onichophora (D) Tardigrada
26. The amount of DNA in G_1 Phase of the cell cycle is
- (A) same as in G_2 phase
(B) half the amount found in G_2 phase
(C) double the amount found in G_2 phase
(D) four times the amount found in G_2 phase
27. Jawless fishes are known as
- (A) sharks (B) eels
(C) agnatha (D) prognathous
28. Scientific name of Lac insect is
- (A) *Apis indica* (B) *Laccifer lacca*
(C) *Aedes aegypti* (D) *Musca domestica*
29. *Myxine* is commonly known as
- (A) Hag fish (B) *Petromyzon*
(C) Lamprey (D) Hedge hog



30. Fish liver oil is rich in
- (A) Vitamin A (B) Vitamin B and K
(C) Vitamin B and C (D) Vitamin A and D
31. The United Nations proclaimed as the International Day for Biological Diversity.
- (A) 22nd May (B) 29th December
(C) 18th January (D) 5th March
32. Which of these animal groups are totally marine?
- (A) Coelenterates (B) Prawns
(C) Echinoderms (D) Molluscs
33. *Entamoeba* causes
- (A) mouth diseases (B) diarrhoea
(C) dysentery (D) None of the above
34. *Sacculina* is a
- (A) sea-anemone (B) crustacean
(C) planarian (D) annelid
35. In the sea, the layer of water with rapid vertical temperature change is
- (A) thermocline (B) thermostat
(C) thermotaxis (D) thermoperiodism
36. Which is the fastest moving land animal?
- (A) Antelope (B) Gazelle
(C) Hare (D) Cheetah



37. True segmentation is found in
- (A) cestoda (B) trematoda
(C) annelida (D) arthropoda
38. Flatworms are
- (A) radially symmetrical (B) pseudocoelomate animals
(C) acoelomate animals (D) coelomate body cavity
39. DNA is a polymer of
- (A) nucleotides (B) nucleosides
(C) fatty acids (D) phosphodiesters
40. Egg of eutherian mammals is
- (A) centrolecithal (B) microlecithal
(C) telolecithal (D) macrolecithal
41. Biological control of mosquito larvae is carried out with
- (A) *Gambusia* (B) *Aphids*
(C) *Pila globosa* (D) *Ranatra*
42. In *Paramecium* the neuromotor system controls
- (A) locomotion (B) digestion
(C) reproduction (D) osmoregulation
43. The famous book written by Charles Darwin is
- (A) The Origin of Earth (B) The Challenger
(C) The Origin of Species (D) The Animalcules
44. Muscle fatigue is a result of accumulation of
- (A) malic acid (B) hydrochloric acid
(C) lactic acid (D) water



45. Ecological succession is typified by
- (A) forest changing naturally into grassland over time
 - (B) grassland changing naturally into forest over time
 - (C) bare ground remaining bare after clearance of vegetation
 - (D) animals becoming larger with time
46. In young animals, an involuntary and nearly instantaneous movement in response to a stimulus is known as
- (A) inbreeding
 - (B) reflex action
 - (C) instinctive behaviour
 - (D) imprinting
47. Bhopal Gas Tragedy was due to the leakage of
- (A) methyl isocyanate
 - (B) isocyanic acid
 - (C) potassium cyanide
 - (D) methyl amine
48. Pangolin is a
- (A) marine mammal
 - (B) edentate
 - (C) homodont
 - (D) heterodont
49. In the course of evolution four chambered heart occurred first in
- (A) birds
 - (B) mammals
 - (C) fishes
 - (D) primates
50. Which of the following is considered as vestigial organ?
- (A) Hair
 - (B) Nail
 - (C) Caecum in rabbits
 - (D) Vermiform appendix
51. Botryoidal tissue is found in
- (A) tapeworm
 - (B) roundworm
 - (C) leech
 - (D) earthworm



52. In Eutheria, if the fertilised ovum is implanted in the uterine wall, then further development of the foetus cannot occur
- (A) with mother's hormones
 - (B) without the formation of placenta
 - (C) in the presence of progesterone
 - (D) in the presence of foetal membranes
53. A continuous unidirectional, sequential change in species composition is known as
- (A) succession
 - (B) evolution
 - (C) variation
 - (D) genetic drift
54. The disease 'Delhi boils or oriental sore' is caused by
- (A) *Leishmania tropica*
 - (B) *Leishmania donovani*
 - (C) *E. coli*
 - (D) *Trypanosoma gambiense*
55. Development of egg without fertilisation is known as
- (A) parthenogenesis
 - (B) autogamy
 - (C) syngamy
 - (D) cleavage
56. The biota responsible for creation of theory of Organic Evolution is from
- (A) Madagascar
 - (B) Greenland
 - (C) Galapagos
 - (D) Andamans
57. Elephantiasis is caused by
- (A) *Wucheraria bancrofti*
 - (B) *Ancylostoma duodenale*
 - (C) *Ascaris lumbricoides*
 - (D) *Trichonell spiralis*



58. Notochord is the derivative of
- (A) mesoderm (B) ectoderm
(C) endoderm (D) None of the above
59. The organs of excretion in flatworms are
- (A) Protonephridia (B) Nephridia
(C) Malpighian tubules (D) Contractile vacuole
60. "Father of Green Revolution" is
- (A) Mendal (B) W.G. Moseley
(C) Salim Ali (D) Norman Borlaug
61. Insulin is produced by
- (A) α -cells (B) adrenal cortex
(C) β -cells (D) parathyroid
62. A large group of different diseases, involving cells that divide and grow uncontrollably forming tumors and invade neighbouring tissues are commonly referred to as
- (A) hyperplasia (B) neoplasia
(C) tumor (D) cancer
63. Azotobacter/Azospirillum are widely used as
- (A) biomarker (B) bioindicator
(C) biofertiliser (D) biotoxin
64. Tricuspid valve is present in the heart of
- (A) Crocodile (B) Rabbit
(C) Pigeon (D) Mullet



65. Improving human race by improving the environment is known as
- (A) Eugenics (B) Euthenics
(C) Euphenics (D) Ecology
66. Binomial system of classification was established by
- (A) Darwin (B) Aristotle
(C) Linnaeus (D) Lamarck
67. Representative of sub-phylum Cephalochordata is
- (A) *Branchiostoma* (B) *Saccoglossus*
(C) *Balanoglossus* (D) *Ascidia*
68. Osmoregulation is control over the
- (A) removal of nitrogen from blood
(B) pH of the blood
(C) concentration of salt and water in the body
(D) conserve water
69. Blood vessels that carry pure blood from lungs to heart are
- (A) Coronary arteries (B) Pulmonary arteries
(C) Precaval vein (D) Pulmonary vein
70. The movement of cilia and flagella are due to
- (A) sliding microtubules
(B) contraction of microfilaments
(C) changes in turgor pressure in the body
(D) changes in cell wall
71. In sponges gemmules are
- (A) respiratory pigments (B) phagocytes
(C) reproductive agents (D) excretory cells



72. The science of classification of plants and animals is
- (A) Groupism (B) Lamackism
(C) Anatomy (D) Taxonomy
73. An animal having male part on one side and female part on the other is known as
- (A) bi-sexual (B) hermophrodite
(C) gynandromorph (D) normal
74. Survival of the fittest is known as
- (A) inheritance (B) natural selection
(C) longevity (D) None of the above
75. Meiotic cell division occurs in
- (A) somatic cells (B) gamete cells
(C) liver cells (D) spleen cells
76. Reduction in chromosomal numbers occurs during
- (A) mitosis (B) amitosis
(C) meiosis (D) None of the above
77. Green House effect is due to increase of gas in atmosphere
- (A) sulphur dioxide (B) carbon dioxide
(C) ozone (D) nitrogen
78. Lacrymal glands are responsible for secretion of
- (A) tears (B) saliva
(C) 1N HCl (D) fatty acid



79. The relationship between birth rate and death rate referred to as rate of increase for a population (r) is
- (A) their sum
 - (B) their product
 - (C) doubling time between them
 - (D) difference between them
80. The power houses of an animal cell are
- (A) golgi bodies
 - (B) mitochondria
 - (C) chromosomes
 - (D) assimilated food
81. Sharks, rays and skates belong to the class
- (A) Amphibia
 - (B) Reptilia
 - (C) Pisces
 - (D) Aves
82. In an ecosystem the place occupied by a species may be termed as
- (A) Ecotone
 - (B) Niche
 - (C) Biome
 - (D) Biosphere
83. *Ichthyophis* is an example of
- (A) sea snake
 - (B) flying lizard
 - (C) limbless lizard
 - (D) limbless amphibian
84. A molecule that elicits immune response is called
- (A) Antigen
 - (B) Antibody
 - (C) Carcinogen
 - (D) Mutagen
85. Ammocoetus is the larva of
- (A) amphioxus
 - (B) hippocampus
 - (C) petromyzon
 - (D) marine eel



86. Proteins that span the bilayer membrane with extra and intracellular domains are called
- (A) trans membrane proteins (B) mucoproteins
(C) glycoproteins (D) lipoproteins
87. Representative of sub-phylum Onychophora is
- (A) *Peripatus* (B) *Periplanata*
(C) *Balanoglossus* (D) *Ascidia*
88. One of the important adaptations of the birds for flight is
- (A) amniotic egg (B) small joints
(C) elastic bones (D) pneumatic bones
89. Among protozoans, osmoregulation is performed by
- (A) food vacuole (B) contractile vacuole
(C) plasma membrane (D) ectoplasm
90. Colour blindness and Haemophilia are best examples for
- (A) Sex linked disease
(B) 13th Chromosomal syndrome
(C) Vitamin deficiency
(D) Chromosomal aberration
91. In birds flight muscles are attached to
- (A) Keel of sternum (B) Scapula
(C) Clavicle (D) Coracoid plexus
92. Coelacanth is a
- (A) protochordate (B) dipnoi
(C) holocephalii (D) living fossil



93. Actinotrocha is the larval stage of
- (A) Balanoglossus (B) Chaetognatha
(C) Phoronida (D) Rotifera
94. Male fish releases young ones in
- (A) clown fish (B) hippocampus
(C) ophiocephalus (D) sun fish
95. Bioluminescence in glow worms is on account of
- (A) interleukine (B) luciferin
(C) interferons (D) glycine
96. Which one of the following is a sea snake?
- (A) Anaconda (B) *Tropidonotus*
(C) *Dryophis* (D) *Hydrophis*
97. ABO blood group is an inherited characteristic involving
- (A) gene expression (B) variations
(C) multiple allelism (D) mutations
98. Scientific name of pin worm is
- (A) *Ascaris lumbricoides* (B) *Ancylostoma duodenale*
(C) *Enterobius vermicularis* (D) *Dracanculus madenensis*
99. In India, organisation concerned with brackishwater aqua culture is
- (A) CIBA (B) CMFRI
(C) CSIR (D) CIFT



100. Pogonophora does not have
- (A) Digestive system (B) Respiratory system
(C) Circulatory system (D) Nervous system
101. Haemoglobin contains
- (A) Iron (B) Nickel
(C) Copper (D) Cobalt
102. Dipleurula is the larva of
- (A) echinoderms (B) insects
(C) hypothetical (D) None of the above
103. Polytene chromosomes are seen in
- (A) salivary glands of dipterans (B) ovarian follicles of reptiles
(C) acrosome of sperm (D) oocytes of amphibians
104. Main function of tube feet in echinoderms is
- (A) locomotion (B) reproduction
(C) sensory (D) None of the above
105. The horse shoe crab belongs to the genus
- (A) *Limulus* (B) *Palamnaeus*
(C) *Mytilus* (D) *Scylla*
106. Enterokinase
- (A) converts trypsin to trypsinogen
(B) converts trypsinogen to trypsin
(C) inhibits secretion of HCl
(D) is an inactive enzyme



107. Rotation and asymmetry noticed in gastropods is a result of
- (A) bending (B) torsion
(C) twisting (D) coiling
108. Accessory respiratory organ is found in
- (A) mullets (B) eels
(C) ophiocephalus (D) sardines
109. Larval stage of *Star fish* is referred to as
- (A) Tomaria (B) Bipinnaria
(C) Ephyra (D) Zoca
110. Slender loris belongs to
- (A) carnivora (B) primates
(C) cetacea (D) dermoptera
111. Ancestral amphibians evolved during
- (A) Carboniferous period (B) Devonian period
(C) Jurassic period (D) Cretaceous period
112. In man, blood pressure is
- (A) pressure of blood vessel walls exerted on blood due to narrowing down
(B) pressure in veins
(C) pressure exerted by circulating blood upon the walls of blood vessels
(D) pressure in arteries.
113. Cataract is a condition caused by
- (A) sty in the eye (B) infection of retina
(C) cloudiness of the lens (D) nerve degeneration



114. Deficiency of Vitamin B₁₂ causes
- (A) Pernicious anaemia (B) Haemophilia
(C) Leukemia (D) Ablastic anaemia
115. In 1968, the Indian scientist, Hargobind Khorana shared the Nobel Prize for his work on
- (A) deciphering genic code
(B) identification of nucleo proteins
(C) synthesis of DNA
(D) structure of DNA
116. Fairy shrimp *Streptocephalus sp.* belongs to
- (A) copepoda (B) ostracoda
(C) branchiopoda (D) cirripedia
117. Teeth in sharks are modified
- (A) ectodermal tissue (B) endodermal tissue
(C) placoid scales (D) ctenoid scales
118. What is the national animal of India?
- (A) Lion (B) Giraffe
(C) Royal Bengal tiger (D) One-horned rhinoceros
119. Venom of cobra is essentially a
- (A) neurotoxin (B) cytotoxin
(C) myotoxin (D) phytotoxin
120. In man, average life of RBC is
- (A) exactly 90 days (B) 100–120 days
(C) 60 days (D) one year



121. Flame cells in amphioxus function as organs of
- (A) respiration (B) temperature regulation
(C) excretion (D) reproduction
122. *Chaetopterus* is a
- (A) tubicolous polychaete (B) planktonic polychaete
(C) parasitic polychaete (D) burrowing polychaete
123. Egg laying mammal of Australia is
- (A) Echidna (B) Dugong
(C) Kangaroo (D) None of the above
124. Lateral line functions as
- (A) respiratory organ (B) excretory organ
(C) osmo-regulatory organ (D) None of the above
125. Cyclops is a
- (A) parasitic copepod (B) fresh-water copepod
(C) marine copepod (D) fresh-water bug
126. Respiratory tree is found in
- (A) asteroidea (B) echinoidea
(C) holothuroidea (D) crenoidea
127. Among poultry birds, clipping of the upper beak is known as
- (A) culling (B) dubbing
(C) pecking (D) debeaking
128. Octopus belongs to
- (A) cephochordata (B) cephalopoda
(C) cephalodiscs (D) None of the above



129. Which of the following is an example of discontinuous distribution?
- (A) Whales (B) Molluscs
(C) Dipnoi (D) Birds
130. Eustachian tube connects
- (A) middle ear and buccal cavity
(B) internal ear and middle ear
(C) middle ear and external ear
(D) middle ear and brain
131. In mammals, the hormone that stimulates production of milk is
- (A) Oxytocin (B) Prolactin
(C) Thyroxine (D) Testosterone
132. In *Plasmodium*, infective stage to man is
- (A) Dormozoite (B) Sporozoite
(C) Hypnozoite (D) Trophozoite
133. Sharks, penguins and porpoises together exhibit
- (A) morphological divergence (B) parallel evolution
(C) morphological convergence (D) co-evolution
134. The volume of blood pumped per minute by each ventricle is explained as
- (A) cardiac cycle (B) pulse rate
(C) cardiac output (D) cardiac condition
135. Thyroid-stimulating hormone is secreted by
- (A) anterior pituitary gland (B) thyroid
(C) spleen (D) parathyroid



136. Zoogeographical realm that includes sub-Saharan Africa
- (A) Palaearctic realm (B) Ethiopian realm
(C) Nearctic realm (D) Neotropical realm
137. In women, erythroblastosis foetalis is due to
- (A) Rh Factor (B) Hageman's factor
(C) Antihaemophilic factor (D) deficiency of Vitamin K
138. Clown fishes are
- (A) deep water fishes (B) extinct fishes
(C) moon fishes (D) sea-anemone associates
139. Hole in the Ozone layer is noticed in the atmosphere above
- (A) Antarctica (B) Northern Europe
(C) Greenland (D) Western Pacific
140. In the life cycle of *Plasmodium vivax* crypto and metacryptozoites are found in
- (A) liver cells
(B) R.B.C.
(C) mosquito gut epithelial cells
(D) salivary gland lumen of mosquito
141. Hepatic-caecae is present in
- (A) sepia (B) onchidium
(C) cockroach (D) fishes
142. Among fishes, migration from sea to freshwater for spawning is known as
- (A) Anadromous (B) Catadromus
(C) Potamodromus (D) None of the above



143. Hatschek's pit is found in
- (A) holothuroidea (B) amphioxus
(C) ascidians (D) enterpneusta
144. Mammary glands are devoid of teats in
- (A) Marsupials (B) Ungulata
(C) Monotremes (D) Proboscida
145. A unique character of Echinodermata is
- (A) presence of lungs
(B) presence of water vascular system
(C) presence of setae
(D) tracheal system
146. Glycolysis occurs in the
- (A) Cytoplasm and results in production of pyruvate
(B) Mitochondria and results in production of Acetyl Co A
(C) Nucleus and results in production of Citrate
(D) Golgi complex and results in ATP
147. Freely movable joints with bones separated by fluid filled cavity are known as
- (A) Hinge joints (B) Fibrous joints
(C) Cartilaginous joints (D) Synovial joint
148. Red tides on the sea surface are formed due to
- (A) *Mesodinium rubrum* (B) *Paramecium caudatum*
(C) *Ceratium furca* (D) *Euglena acus*



149. In prawns, the sequence of larval stages is

- (A) Nauplius → Metanauplius → Protozoa → Zoea → Mysis
- (B) Nauplius → cypris → Protozoa → Zoea → Mysis
- (C) Nauplius → Alima → Zoea → Mysis
- (D) Protozoa → Metanauplius → Zoea → Mysis

150. *Tomopterus* is a

- (A) planktonic polychaete
- (B) benthic polychaete
- (C) intertidal polychaete
- (D) tubicolous polychaete