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COMBINED COMPETITIVE (PRELIMINARY) EXAMINATION, 2011

Serial No. 000506 **ZOOLOGY** B
Code No. 22

Time Allowed : Two Hours Maximum Marks : 300

INSTRUCTIONS

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- This Booklet contains 120 items (questions). Each item comprises four responses (answers). You will select one response which you want to mark on the Response 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.
- In case you find any discrepancy in this test booklet in any question(s) or the Responses, a written representation explaining the details of such alleged discrepancy, be submitted within three days, indicating the Question No(s) and the Test Booklet Series, in which the discrepancy is alleged. Representation not received within time shall not be entertained at all. The Commission shall take appropriate decision on the representations received in accordance with the Rules which shall be final.
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- All items carry equal marks. Attempt ALL items. Your total marks will depend only on the number of correct responses marked by you in the Response Sheet.
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SEAL

- Temporal fossa is the basis of classifying :
(A) Birds (B) Amphibians
(C) Cyclomates (D) Reptiles
- Which one of the following bone is not found in the middle ear of mammals ?
(A) Malleus (B) Incus
(C) Staples (D) Calcaneus
- The hardest part of tooth "Enamel" is secreted by :
(A) Mesenchyme cells (B) Odoblast
(C) Ameloblast (D) Dermal papilla
- Which one of the following is called as "Knife Fish" ?
(A) Protopterus Sp (B) Notopterus Sp
(C) Neoceratodus Sp (D) Lepidosiren Sp
- Filature is related to :
(A) Vermiculture (B) Apiculture
(C) Sericulture (D) Aquaculture
- The Excretory product in birds is :
(A) Ammonia (B) Urea
(C) Uric acid (D) Urine
- Nucleolus contain :
(A) Ribosomal RNA (B) DNA
(C) Messenger RNA (D) Transfer RNA
- The cell organelle involved in breaking down the cell when it dies is :
(A) Golgi complex (B) Lysosomes
(C) Ribosomes (D) Microsomes
- Name the vitamin essential for conversion of Pyruvic acid to acetic acid by carboxylase enzyme in glucose breakdown :
(A) Riboflavin (B) Pyridoxine
(C) Cyanocobalmine (D) Thiamine

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10. "No two organisms have got the same ecological niche", this concept is called :
(A) Law of Minimum (B) Tragedy of Common
(C) Law of Tolerance (D) Competitive Exclusion Principle

11. Which rule suggests relationship between number of vertebrae and their habitat (Temperate/Tropical) in fishes ?
(A) Allen's rule (B) Jordan's rule
(C) Gloger's rule (D) Vanthoff's rule

12. Liver abcess is caused due to which parasite ?
(A) *Taenia solium* (B) *Liver fluke*
(C) *Entameoba histolytica* (D) *Entameoba gingivalis*

13. *Taenia solium* does not have one of the following structure :
(A) Rostellum (B) Laurer's canal
(C) Mehlis gland (D) Cirrus sac

14. Bhopal gas tragedy occurred due to which one of the following ?
(A) Baygon (B) Methyl Isocyanate
(C) Tetramethyl lead (D) Dimethoate

15. The Indian Wild Life Protection Act was brought into force on :
(A) 1st May, 1982 (B) 1st April, 1973
(C) 1st April, 1972 (D) 1st April, 1980

16. Recapitulation theory is proposed by :
(A) Weisman (B) Deveries
(C) Haeckel (D) Morgan

17. Mesoderm give rise to one of the following :
(A) Gonads (B) Mouth
(C) Epidermis (D) Cerebral hemispheres

18. Cortical granules which help in fertilization are found in :
(A) Sperms (B) Spermatids
(C) Ovum (D) Graffian follicles

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19. Kappa particles are present in :
(A) Ameoba Sp (B) Balantidium Sp
(C) Paramecium Sp (D) Plasmodium Sp

20. The largest wet land among the following is :
(A) Chilika lake (B) Pulicat lake
(C) Kaliveli tank (D) Vedanhangal

21. The profession of an organism in an ecosystem is called :
(A) Edge effect (B) Ecological niche
(C) Niche overlap (D) Biotic potential

22. Among the following wildlife species, identify the wrong pair :
(A) Black Buck : *Antelope cervicapra*
(B) Tiger : *Panthera tigris*
(C) Leopard : *Panthera pardus*
(D) Asiatic Lion : *Panthera sylvastris*

23. Social life among animals is on account of :
(A) Hormones (B) Pheromones
(C) Neuro transmitters (D) Enzymes

24. The web of spider is derived from the secretions of its :
(A) Salivary glands (B) Legs
(C) Abdomen glands (D) Wings

25. Which one of the following is not a characteristic of protostomous coelomates ?
(A) Origin of mouth from blastopore
(B) Coelom formation of entocoelous
(C) Cleavage pattern spiral and determinate
(D) Arrangement of coelomic cavities variable in number

26. The idea that "Every cell has preexisting cell" is given by :
(A) Hyman (B) Goldfuss
(C) Virchow (D) Huxely

27. "Certain structures of living organism become more strong on their constant use". This is the main theme of evolutionary theory suggested by :
(A) Lamarck (B) Darwin
(C) Harvey (D) Weisman

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28. Nucliec acids are linear polymers of nucleotides connected by :
(A) Peptide bonds (B) Hydrogen bond
(C) Phosphodiester bond (D) Covalent bond
29. "SPF 66" vaccine which is developed by Patoroya and is partly successful is against :
(A) Wucheraria bancrofti (B) Liver fluke
(C) Plasmodium (D) Trypanosoma
30. The flagellated cells lining the Spargocoel of sponges are :
(A) Archeocytes (B) Choanocytes
(C) Porocyte (D) Pinacocytes
31. In Cnidaria, polymorphism is best seen in :
(A) Anthozoa (B) Scyphozoa
(C) Hydrozoa (D) Calcarea
32. The best example of Symbiosis is :
(A) Trichonympha and opalina (B) Asplanchna and paramecium
(C) Zooxanthella and Jelly fishes (D) Ameoba and Iodameoba
33. The balance organs in scyphozoans are :
(A) Ocelli (B) Sensory Lappets
(C) Statocysts (D) Oral arm
34. In marine turbellarians, embryo give rise to short lived, microscopic free swimming larva called as :
(A) Amphiblastula larva (B) Muller's larva
(C) Oncomeracidium (D) Cercaria
35. The functional unit of Circulatory System is :
(A) Arteries (B) Veins
(C) Capillary beds (D) Lymph
36. Identify the poisonous snake among the following :
(A) Uropeltis (B) Ptyas
(C) Lycodon (D) True vipers
37. Macrophages are :
(A) Lymphocytes (B) Neutrophils
(C) Monocytes (D) Basophils
38. The class Anthozoa of cnidaria is identified by the absence of :
(A) Circular mitochondrial DNA (B) Operculum and prominent medusa
(C) Ciliated groove (D) Coelentron
39. In the process of digestion poly peptides are converted to dipeptides by action of which enzyme ?
(A) Trypsin (B) Carboxypeptidase
(C) Dipeptidase (D) Chemotrypsin
40. Identify the one which is biodegradable :
(A) Plastic (B) Paper
(C) DDT (D) Endrin
41. The term "Hela cells" is associated with :
(A) Stem cells (B) Cancerous cells
(C) Totipotent cells (D) Benign cells
42. In the formation of Eyes, cyclopia is a condition in which :
(A) A pair of lateral placed eyes are formed
(B) Only one lateral placed eye is formed
(C) Only one median eye is formed
(D) A pair of defective eyes are formed
43. The brain hormone from the neurosecretory cells of insects activates which gland ?
(A) Corpora cardiaca (B) Corpora allata
(C) Prothoracic (D) Epidermal cells
44. Which one of the following is not an Echinoderm larva ?
(A) Echinopluteus larva (B) Bipinnaria larva
(C) Dipleurula larva (D) Tomaria larva
45. Identify the stop codon from the following :
(A) UAA, UAG, UGA (B) AUA, AUC, AUU
(C) CCA, CCC, CCG (D) GUC, GUC, GUG
46. Critically endangered species are those, whose population has been reduced :
(A) $\leq 70\%$ over 10 years or three generations
(B) 90% reduction over 5 years and two generations
(C) 50% reduction over 5 years and three generations
(D) 30% reduction over 2 years and two generations

47. Anamniote development is found in :
(A) fishes (B) fishes and amphibians
(C) birds (D) reptiles and birds
48. "One gene one enzyme" hypothesis is proposed by :
(A) Beadle and Tatum (B) Jacob and Monod
(C) Huxely and Hyman (D) Nicholos and Spencer
49. The bony prominence at the elbow formed by the apophysis of the ulna is called :
(A) Radio (B) Olecranon
(C) Carpels (D) Phalanx
50. Crypts of Lieberkuhn are present in mammalian :
(A) Intestine (B) Oesophagus
(C) Stomach (D) Buccal cavity
51. The shell of molluscs have a thin inner most calcareous layer called as :
(A) Periostracum (B) Nacreons
(C) Prismatic (D) Mantle
52. The plasmid which has resistance genes for Tetracycline and Ampicillin is :
(A) P^{BR 322} (B) p^{UC}
(C) P^{lac} (D) YEP
53. "Populations if unchecked grow in geometric ratio whereas resources grow in arithmetic ratio". This theory is proposed by :
(A) Minot (B) Schmalhausan
(C) Bertalanfee (D) Malthus
54. Scales in cyclostomes are :
(A) Cycloid (B) Absent
(C) Placoid (D) Cteniod
55. "Ampullae of Lorenzini" found in Scoliodon is associated with :
(A) Thermo reception (B) Chemo reception
(C) Thigo reception (D) Audio reception
56. "Methaemoglobinemia" among babies is caused when the consumed water has excess of :
(A) Phosphates (B) Nitrates
(C) Magnesium (D) Chlorides
57. Nocturnal periodicity is manifested by :
(A) *Taenia solium* (B) *Entameoba gingivalis*
(C) *Wuchereria bancrofti* (D) *Schistosoma haematobium*
58. The process of "cyclosis" is found in :
(A) Amoeba (B) Hydra
(C) Sycon (D) Paramecium
59. In crustacea green glands are helpful in the process of :
(A) Colouration (B) Excretion
(C) Respiration (D) Digestion
60. Atavism is :
(A) Formation of new structures
(B) Reappearance of forgotten characters
(C) Inheritance of certain characters
(D) Loss of vestigeal organs
61. The surfaces of Rough Endoplasmic Reticulum contain :
(A) Ribosomes (B) Lysosomes
(C) Golgi complex (D) Mitochondria
62. During hibernation period frog respire by :
(A) Cloaca (B) Buccal
(C) Lungs (D) Skin
63. Deficiency of Thyroxine among children leads to :
(A) Myxodema (B) Cretinism
(C) Exophthalmic goitre (D) Hepatomegaly
64. Solenocytes of Amphioxus are useful in :
(A) Circulation (B) Digestion
(C) Excretion (D) Respiration

65. The rule which states that the amount of nitrogen base present in the sample of DNA differ from species to species, and the amount of combined purines are always equal to the amount of combined pyrimidines was proposed by :
- (A) Levene (B) Franklin
(C) Crick (D) Erwin Chargaff
66. Identify the poisonous snake among following :
- (A) Typhlops (B) Pit vipers
(C) Ptyas (D) Python
67. The fangs of poisonous snakes are modified :
- (A) Mandibular teeth (B) Incisors
(C) Canines (D) Maxillary teeth
68. Hypnotoxin in Hydra is secreted by :
- (A) Mesoglea (B) Cnidoblast
(C) Interstitial cells (D) Endoderm
69. "Pebrine" is a disease of :
- (A) Lac insect (B) Wasp
(C) Honey bee (D) Silkworm
70. Blood plasma does not have one of the following :
- (A) Albumin (B) Fibrinogen
(C) Thrombin (D) Globulin
71. The pace maker of heart is :
- (A) Sinoatrial node (B) Bundle of his
(C) Atrioventricular node (D) Sinus node
72. Which one of the following is functional unit of respiration in man where exchange of oxygen and carbon dioxide occur ?
- (A) Trachea (B) Bronchus
(C) Alveoli (D) Branchioles
73. In a double helix model of DNA the distance between two base pairs is :
- (A) 24 nm (B) 3.4 nm
(C) 0.34 nm (D) 34 nm

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74. Many genes have more than a single effect on organismal phenotype, the phenomenon is termed as :
- (A) Product rule (B) Codominance
(C) Epistasis (D) Pleiotrophy
75. Nucleolar organizer is the term used for :
- (A) Secondary constriction (B) Primary constriction
(C) Nucleolus (D) Nuclear matrix
76. The depolarisation process in action potential is due to transport of :
- (A) K^+ (B) Cl^-
(C) Na^+ (D) Ca^{+2}
77. The resting potential of excitable cell is :
- (A) -70 mv (B) +65 mv
(C) -90 mv (D) 90 mv
78. Metastasis is a characteristic feature of :
- (A) Tumors (B) Benign tumors
(C) Malignant tumors (D) Neoplasia
79. The larval stage of Anguilla is :
- (A) Cidipid (B) Muller
(C) Trocophore (D) Leptocephalus
80. Olecranon process is a part of :
- (A) Ulna (B) Radius
(C) Femur (D) Humerus
81. The Extinct bird among following is :
- (A) Falcon (B) Eagle
(C) Ichthyornis (D) Vulture
82. Flame cells for Excretion are found in :
- (A) Platyhelminthes (B) Porifera
(C) Mollusca (D) Arthropoda
83. 70 'S' Ribosomes are present in :
- (A) Virus (B) Bacteria
(C) Vertebrates (D) Invertebrates

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84. The hormone that helps in implantation of embryo :
(A) Oxytocin (B) Estrogen
(C) Progesterone (D) Relaxin
85. The duration of action potential is :
(A) 1 second (B) 1 msec
(C) 2 seconds (D) 0.3 seconds
86. The neurotransmitter of neuromyal junction is :
(A) Octopamine (B) Norepinephrine
(C) Epinephrine (D) Acetylcholine
87. Identify the false statement about Balbiani rings :
(A) They are found in salivary glands of dipteran larva
(B) They are found in polytene chromosomes
(C) They are observed in Oocyte nucleus of all the mammals
(D) They are site of RNA synthesis and accumulation of proteins
88. The highest capacity of habitat to support maximum number of organisms is called :
(A) Carrying capacity (B) Fecundity
(C) Productivity (D) Natality
89. Which one of the following is not a respiratory pigment ?
(A) Haemozoin (B) Haemocyanin
(C) Haemoglobin (D) Chlorocruinin
90. The ratio of dominant epistasis is as follows :
(A) 12 : 2 (B) 9 : 6
(C) 5 : 3 (D) 13 : 1
91. The unit of crossing over is called :
(A) Muton (B) Cistron
(C) Recon (D) Recombinant
92. Who among the following explained the phenomenon of gene regulation ?
(A) Johanssen (B) Jacob and Monod
(C) Friefelder (D) De Roberties

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93. The world's largest leech is :
(A) *Acanthobdella* (B) *Pilacobdella*
(C) *Hirudo medicinalis* (D) *Haementaria ghilari*
94. Identify the natural toxin among the following :
(A) Endrin (B) Malathian
(C) Azadirachtin (D) Baygon
95. Telomere is the terminal part of :
(A) Sarcomere (B) Chromatid
(C) Neuron (D) Dendrite
96. Sickle cell anaemia is a rare :
(A) Nutritional disease (B) Infectious disease
(C) Metabolic disease (D) Pollutional disease
97. Lowest number of chromosomes are found in :
(A) *Ameoba protens* (B) *Taenia solium*
(C) *Drosophila melanogester* (D) *Ascaris megaloccephala*
98. One of the following is not required in "cloning" :
(A) DNA ligase (B) Methylase
(C) Donor DNA (D) A vector
99. "Silent Spring", a book on environmental degradation and crisis is written by :
(A) Elton (B) Haeckel
(C) Rachel Carson (D) Hutchinson
100. Variations which are sudden, heritable and significant for evolution are :
(A) Discontinuous (B) Determinate
(C) Indeterminate (D) Continuous
101. The wild and dangerous species of *Apis*, famous for its unprovoked attacks and difficult to be domesticated is :
(A) *Apis indica* (B) *Apis mellifera*
(C) *Apis minuta* (D) *Apis dorsata*
102. Locomotory organelles are absent in :
(A) Sarcodina (B) Sporozoa
(C) Apicomplexa (D) Flagellata

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103. Identify the wrong pair :

- (A) Mitochondria - Kreb's cycle
- (B) Lysosomes - Autolysis
- (C) Ribosomes - Protein Synthesis
- (D) Golgi complex - Transport system

104. Commercially valuable mollusc which is extensively used in pearl formation is :

- (A) Pinctada (B) Patella
- (C) Murex (D) Mytilus

105. Which one of the following is an agricultural pest ?

- (A) Fleas (B) Cockroach
- (C) Aphids (D) Lice

106. Colour perception of Eye is associated with the presence of :

- (A) cones (B) rods
- (C) rods and cones (D) cornea

107. Which one of the following character is false about echinoderms ?

- (A) Marine animals (B) Appeared near Cambrian period
- (C) They are protostomes (D) Spiny skin

108. The interconnection between various food chains is :

- (A) Energy Flow (B) Food Web
- (C) Biome (D) Niche Overlap

109. Artificial or induced cell death is called :

- (A) Apoptosis (B) Necrosis
- (C) Steatosis (D) Cirrhosis

110. Which one of the following is essential for blood clotting ?

- (A) Red blood cells (B) White blood cells
- (C) Platelets (D) Bone marrow cells

111. Zinc phosphide and warfarin are the examples of :

- (A) Acaricides (B) Insecticides
- (C) Weedicides (D) Rodenticides

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112. Identify the correct statement about *Vasopressin* among the following :

- (A) It is secreted by hypothalamus
- (B) It reduces work load on kidneys
- (C) It dilutes the blood
- (D) It makes the kidney reabsorb water from ultrafiltrate

113. Eutrophication of lake is said to have occurred if the water body shows following characteristics :

- (A) Deep water body, less nutrients, high biodiversity and high dissolved oxygen
- (B) Shallow water body, high nutrients, high biodiversity and high dissolved oxygen
- (C) Deep water body, less nutrients, low biodiversity and low dissolved oxygen
- (D) Shallow water body, high nutrients, less biodiversity, algal blooms and low dissolved oxygen

114. Kappa particles in paramecium help in :

- (A) Cytoplasmic inheritance (B) Chromosomal inheritance
- (C) Digestion (D) Osmoregulation

115. One of following is not a general character of mammalia :

- (A) Mammary gland (B) Sebaceous gland
- (C) Endothermal (D) Nucleated red blood cells

116. The aperture through which spinal cord passes out of the skull is called :

- (A) Foramen magnum (B) Foramen ovale
- (C) Foramen manaze (D) Foramen panizee

117. The space between two 'Z' lines in a muscle is called :

- (A) Sarcomere (B) Sarcolemma
- (C) Sarcoplasm (D) Tropomyosin complex

118. Amnion helps in :

- (A) Protection from shock (B) Nutrition
- (C) Digestion (D) Excretion

119. Porifera is characterized by specialized type of regeneration which is known as :

- (A) Budding (B) Reconstitution
- (C) Epimorphic (D) Morpholactic

120. Acaricides are chemicals which kill :

- (A) Ticks and mites (B) Mosquitoes and flies
- (C) Weeds and herbs (D) Rats and mouse

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