

TEACHERS RECRUITMENT BOARD, CHENNAI – 6
WRITTEN COMPETITIVE EXAMINATION FOR
POST GRADUATE ASSISTANTS (2006-2007) – H-07 – C Series

Time Allowed : 3 Hours

ZOOLOGY

Total Marks : 150

1. The limit of resolution of a light microscope, which is defined as the minimum distance between two points that allows for their discrimination as two separate points, is represented by a quantity which is equal to
A) $\frac{0.61\lambda}{NA}$ B) λ
C) $NA \times 0.61 \lambda$ D) $NA + 0.61 \lambda$
(where λ = Wavelength of light; NA = Numerical aperture of the objective lens)
2. Which one of the following is the correct order of diameter in a cell from largest to smallest?
A) Mitochondrion, Microbody, Lysosome, Ribosome, Nucleus
B) Nucleus, Mitochondrion, Lysosome, Microbody, Ribosome
C) Mitochondrion, Nucleus, Lysosome, Microbody, Ribosome
D) Lysosome, Mitochondrion, Nucleus, Ribosome, Microbody
3. The functional groups of atoms involved in peptide bond formation are
A) Hydroxyl and carboxyl B) Carbonyl and hydroxyl
C) Amino and carbonyl D) Carboxyl and amino
4. Polysaccharides are composed of glucose or other simple sugars and are most frequently held together by glycosidic bonding between OH group on
A) C-1 and C-5
B) C-1 and C-4
C) C-1 and C-6
D) C-1 and C-4 or C-1 and C-6
5. An enzyme mediated reaction suddenly stops when a substance is added to the reaction mixture. This means that the substance added to the mixture is
A) a coenzyme of the enzyme in the mixture
B) an inhibitor
C) a substrate
D) all of these
6. Lactate dehydrogenase and glyceraldehyde 3-phosphate dehydrogenase are the enzymes which fall into a category known as
A) Phosphotransferases B) Isomerases
C) Oxidoreductases D) Oxidases
7. The metabolic pathway by which glucose is converted into pyruvic acid is known as
A) Glycogenesis B) Glycolysis
C) Gluconeogenesis D) All of these
8. Bonds formed between non-polar residues, where the electron clouds are symmetrically distributed and there are no local charge differences, are known as
A) Hydrogen bonds B) Ionic bonds
C) Covalent bonds D) Van der Waals bonds
9. Enzymes catalysing the transfer of phosphate groups (ATP or ADP are the phosphate donor or receiver) are known as
A) Oxidoreductases B) Dehydrogenases
C) Oxidases D) Phosphotransferases
10. Which of the following statements is incorrect?
A) The ability to make out fine details by a microscope is known as its resolving power
B) A transmission electron microscope (TEM) is preferred to a light microscope for examining the cell membrane of a kidney cell
C) The inner membrane of the mitochondrion is the site of ATP production
D) The greater the magnification of a microscope, the greater is the resolving power
11. Throughout evolution, Natural Selection has favoured changes that optimize respiration mechanisms in animals. According to Fick's Law, which of the following changes would optimize the rate of diffusion, R?
A) Decrease the surface area, A over which diffusion takes place
B) Increase the distance, over which diffusion takes place
C) Increase the concentration difference, p between the interior of the organism and the external environment
D) Increase the diffusion constant, D
12. Which type of circulatory system regulation do some vertebrates employ to maintain body temperature in a cold environment?
A) Concurrent exchange B) Countercurrent exchange
C) Vasodilation D) Nitric oxide production
13. The lymphatic system is like the circulatory system in that both
A) have nodes that filter out pathogens
B) have capillaries
C) have network of capillaries
D) are closed systems
14. If you hold your breath for a long time, body CO₂ levels are likely to and the pH of body fluids is likely to
A) increase; increase B) decrease ; increase
C) increase; decrease D) decrease ; decrease

- 15. When a mammal swallows, the food is prevented from going up into the nasal cavity by the**
 A) Oesophagus B) Tongue
 C) Epiglottis D) Soft palate
- 16. The secretes digestive enzymes and bicarbonate solution into the small intestine to aid digestion**
 A) Pancreas B) Liver
 C) Gall bladder D) All of these
- 17. All sensory receptors are able to initiate nerve impulses by opening or closing**
 A) Voltage-gated ion channels
 B) Exteroceptors
 C) Interoceptors
 D) Stimulus gated ion channels
- 18. A person with defective otolith sensory receptors**
 A) is deaf
 B) has a difficult time maintaining balance
 C) cannot detect external temperature changes
 D) has a faulty sense of smell
- 19. The receptor for steroid hormones lies**
 A) in the blood plasma
 B) in the cytoplasm
 C) within the plasma membrane
 D) within the nuclear envelope
- 20. Cells that target and kill body cells infected by viruses are**
 A) Macrophages B) Monocytes
 C) Natural killer cells D) Neutrophils
- 21. Sporogony in Plasmodium involves repeated divisions of**
 A) Zygote in mosquito to produce numerous sporozoites
 B) Sporozoites in man to produce numerous gametes
 C) Zygote in mosquito to produce numerous merozoites
 D) Zygote in man to produce numerous sporozoites
- 22. Shivering with cold i.e., the attack of the disease is experienced by a patient of malaria when**
 A) merozoites and toxic substances are released in the blood on completion of an erythrocytic cycle
 B) stage of high fever has subsided
 C) cold wind is blowing
 D) patient is very weak
- 23. Malignant tertian malaria is caused by**
 A) Plasmodium vivax B) Plasmodium ovale
 C) Plasmodium falciparum D) Holozoic malariae
- 24. A common attribute to Amoeba and WBCs of vertebrates is**
 A) Contractile vacuole B) Pseudopodia formation
 C) Independent life D) Holozoic nutrition
- 25. Contractile vacuoles are characteristic osmoregulatory organelles of protozoans. Which protozoan does not have such a contractile vacuole?**
 A) Amoeba proteus B) Euglena viridis
 C) Entamoeba histolytica D) Paramecium caudatum
- 26. In a patient of malaria, gametocytes in RBCs appear at the onset of night, start disintegrating after midnight and disappear completely by the morning. Factor responsible for this periodicity probably is**
 A) blood meal B) darkness
 C) biological clock D) all of these
- 27. Which is correct matching of causative organism and the disease it causes?**
 A) Anopheles maculipennis – Malaria
 B) Glossina palpalis – Sleeping sickness
 C) Wuchereria bancrofti – Filariasis
 D) Leishmania donovani – Gambia fever
- 28. Which is the correct statement pertaining to Ascaris?**
 A) A larval stage of Ascaris is swallowed by cattle which in turn infects human beings
 B) Once inside the host intestine, Ascaris larva develops directly into an adult without entering into other organs of the host
 C) Snail acts as a secondary host of Ascaris
 D) Eggs of Ascaris containing second stage juvenile larvae when swallowed by man become infective
- 29. Indicate the correct statement pertaining to Taenia:**
 A) All proglottids contain both male and female organs
 B) Male organs are confined to posterior proglottids
 C) Only anterior proglottids contain male organs, whereas ripe proglottids contain only uterus filled with eggs
 D) Female organs are confined to anterior proglottids
- 30. Which of the following is the correct order of sedimentation during differential centrifugation?**
 A) Nucleus → Mitochondria → Lysosome → Ribosome
 B) Mitochondria → Nucleus → Lysosome → Ribosome
 C) Lysosome → Mitochondria → Nucleus → Ribosome
 D) Ribosome → Mitochondria → Nucleus → Lysosome
- 31. The transport of amino acids and sugars from the lumen cavity to the epithelium lining is an active transport process because at the end of the process**
 A) the concentration inside the cell is equal to that outside, i.e., the process of diffusion is involved
 B) the concentration inside the cell never exceeds that outside and a specific membrane component is involved in the transfer
 C) a specific membrane component is involved and the substrate can be accumulated inside the cell against the electrochemical gradient
 D) all of these
- 32. Complete hydrolysis of carbohydrates normally occurs under**
 A) acidic conditions
 B) alkaline conditions
 C) neutral conditions
 D) not specific, can take place under all pH
- 33. The framework of the erythrocyte is colourless and sufficiently elastic so that it can**
 A) carry more oxygen
 B) squeeze through openings smaller than its diameter
 C) carry more nutrient materials
 D) facilitate in gaseous exchange at the capillary level
- 34. The choroid plexuses of brain bring about the ultrafiltration of plasma. This ultrafiltrate is known as**
 A) Serum B) Lymph
 C) Cerebrospinal fluid D) Tissue fluid

- 35. The level of calcium in the blood is regulated because**
 A) extra calcium calcifies the bones which thus become brittle and are likely to get cracks
 B) extra calcium gets deposited in the blood vessels and thus clogs them
 C) it is crucial for blood clotting
 D) all of these
- 36. Cushing's syndrome is caused by**
 A) Adrenal underactivity
 B) Adrenal overactivity
 C) Abnormal activity of Adrenal
 D) Adrenal has no connection with the cause of the disease
- 37. Development of secondary sexual characters in females is due to a hormone called**
 A) Progesterone B) Estradiol
 C) Oestrogen D) Estrone
- 38. Much of the sensory, motor and associative neural activity of the cerebrum occurs on the surface, a layer called the**
 A) corpus callosum B) cerebral cortex
 C) limbic system D) basal ganglia
- 39. Which one of the following is not involved in the knee-jerk reflex?**
 A) Stretching of the muscle B) Motor neuron
 C) Muscle spindle D) An interneuron
- 40. In vertebrate hearts, atria contract from the top, while ventricles contract from the bottom. How is this accomplished?**
 A) The depolarization from the sinuatrial node proceeds across the atria from the top, while the depolarization from the atrioventricular node is carried to the bottom of the ventricles before it emanates over the ventricular tissue.
 B) The depolarization from the sinuatrial node is initiated from motor neurons coming down from our brain, while the depolarization from the atrioventricular node is initiated from motor neurons coming up from our spinal cord.
 C) Gravity carries the depolarization from the sinuatrial node down from the top of the heart, while contraction of the diaphragm forces the depolarization from the atrioventricular node to move from the bottom up
 D) This statement is false; both contract from the bottom
- 41. What is the role of Ca^{++} in muscle contraction?**
 A) It binds to tropomyosin, enabling troponin to move and reveal binding sites for cross-bridges
 B) It binds to troponin, enabling tropomyosin to move and reveal binding sites for cross-bridges
 C) It binds to tropomyosin, enabling troponin to release ATP
 D) It binds to troponin, enabling tropomyosin to release ATP
- 42. Which of the following statements about muscle metabolism is false?**
 A) Skeletal muscles at rest obtain most of their energy from muscle glycogen and blood glucose
 B) ATP can be quickly obtained by combining ADP with phosphate derived from creatine phosphate
 C) Exercise intensity is related to the maximum rate of oxygen consumption
 D) ATP is required for the pumping of the Ca^{++} back into the sarcoplasmic reticulum
- 43. Phages infect bacterial cells by**
 A) poking holes in the cell and injecting their DNA
 B) destroying the bacterial cell wall
 C) receptor-mediated endocytosis
 D) exocytosis
- 44. The alteration of a cell's genome by the incorporation of foreign DNA is called**
 A) Genetic conversion B) Transformation
 C) Mutation D) Reverse transcription
- 45. Inside the host cell, the enzyme of HIV produces a DNA copy of the viral genome**
 A) DNA polymerase B) Reverse transcriptase
 C) RNA polymerase D) Helicase
- 46. The drug AZT and its analogs function by**
 A) inhibiting the replication of viral nucleic acid
 B) blocking the production of envelope proteins
 C) blocking the production of capsid proteins
 D) blocking the binding of the virus to human cell receptors
- 47. Which of the following is not found in prokaryotic cells?**
 A) Ribosomes
 B) Nucleus
 C) Cell wall
 D) Photosynthetic membranes
- 48. Which of the following statements is incorrect?**
 A) DNA in the nucleus is usually coiled into chromosomes
 B) The nucleolus is the site of ribosomal RNA synthesis
 C) Some substances can pass into and out of the nucleus
 D) Red blood corpuscles cannot synthesize RNA
- 49. The first thing a sea urchin sperm encounters when it makes contact with the egg is the**
 A) Plasma membrane B) Vitelline membrane
 C) Jelly coat D) Zona pellucida
- 50. 'Differentiation' is a phenomenon of**
 A) formation of different organs
 B) formation of two different sexes
 C) transformation of same type of cells of the developing embryo into different types
 D) formation of three germ layers
- 51. The possible blood groups likely to be inherited by children born to a group A mother and group B father are**
 A) A, B, AB and O B) A, B and AB
 C) AB only D) A and B only
- 52. The validity of F_1 hybrid is determined by**
 A) breeding together the brothers and sisters of the F_1 generation
 B) back crossing one or more of the F_1 individuals
 C) test crossing one or more of the F_1 individuals
 D) producing a large number of progeny
- 53. Human immunodeficiency virus consists of the protein sheath and genetic material. The genetic material is**
 A) Single-stranded RNA filament
 B) Double-stranded RNA filament
 C) Double - stranded DNA filament
 D) Single-stranded DNA filament

54. An intermediate product during Kreb's cycle is

- A) Lactic acid
- B) Isocitric acid
- C) Pyruvic acid
- D) Acetyl coenzyme A

55. For deciphering the genetic code, H.G. Khorana synthesized

- A) Triplet codons
- B) Gene for yeast alanyl t-RNA
- C) Homopolymers
- D) Copolymers of repetitive sequences

56. From a DNA template with the sequence CTGATAGC, the mRNA sequence formed would be

- A) GUCTUTCG
- B) UACTATCU
- C) GAUTATUG
- D) GACUAUCG

57. An anticodon is

- A) unpaired triplet of bases on r-RNA
- B) paired triplet of bases on r-RNA
- C) unpaired triplet of bases in an exposed position on t-RNA
- D) paired triplet of bases in the messenger RNA

58. Which of the following statements about glycogen is correct?

- A) A disaccharide stored in liver and can react NH_3 to form proteins
- B) Synthesized in liver and takes part in the formation of bile and lipase besides being a source of energy
- C) A polysaccharide synthesized and stored in liver cells
- D) Synthesized in blood and stored in liver and muscles to provide glucose in times of need

59. Consider the following statements and choose the correct answer from the options that follow:

- I. RNA polymerase is an enzyme involved in the synthesis of RNA from a DNA template
- II. Alteration in the DNA molecule that does not produce any amino acid change in the protein synthesized is called frame shift mutation.

Of the statements :

- A) Both the statements I and II are correct
- B) Both the statements I and II are wrong
- C) Statement I is correct, but II is wrong
- D) Statement I is wrong, but II is correct

60. Match List I correctly with List II and select your answer using the codes given below :

- | List I | List II |
|--------------------|---|
| a) Kinetochore | 1. Chromosome formed by the joining of two identical chromosome arms |
| b) Microsome | 2. Failure of one or more homologous chromosome pairs to separate properly during cell division |
| c) Non-disfunction | 3. Small closed vesicle of ER membrane obtained upon differential centrifugation |

d) Isochromosome

4. Region of the centromere to which spindle microtubules attach during cell division

Codes :

- | | a | b | c | d |
|----|---|---|---|---|
| A) | 1 | 2 | 3 | 4 |
| B) | 4 | 3 | 2 | 1 |
| C) | 4 | 2 | 3 | 1 |
| D) | 4 | 1 | 2 | 3 |

61. Which of the following is not a method used in maintaining homeostasis in the body?

- A) Behavioural changes
- B) Negative feedback loops
- C) Hormonal actions
- D) Positive feedback loops

62. A shark's blood is isotonic to the surrounding sea water because of the reabsorption of in its blood

- A) ammonia
- B) urea
- C) uric acid
- D) sodium chloride

63. In the haplodiploidy system of sex determination, males are

- A) Haploid
- B) Diploid
- C) Sterile
- D) Not present because bees exist as single populations

64. The entire range of factors an organism is able to exploit in its environment is its

- A) Community
- B) Realized niche
- C) Fundamental niche
- D) Habitat

65. The phenomenon known as character displacement is associated with

- A) Sympatric species
- B) Allopatric species
- C) Competitive exclusion
- D) Primary succession

66. Which of the following statements is false with reference to Michaelis and Menten hypothesis?

- A) Only a single substrate is involved and a single product is formed
- B) The concentration of the substrate is much greater than that of the enzyme in the system
- C) An intermediate enzyme-substrate complex is formed
- D) The rate of decomposition of the substrate is not proportional to the concentration of the enzyme-substrate complex

67. The equilibrium model of island biogeography suggests all of the following except

- A) larger islands have more species than smaller islands
- B) smaller islands have lower rates of extinction
- C) the species richness of an island is determined by colonization and extinction
- D) islands closer to the mainland will have higher colonization rates

68. Which two factors are most important in biome distribution?

- A) Temperature and latitude
- B) Rainfall and temperature
- C) Latitude and rainfall
- D) Temperature and soil type

- 69. Which of the following is currently considered the leading cause of extinction?**
 A) Over-exploitation of species
 B) Competition from introduced species
 C) Habitat loss
 D) All the above
- 70. Which one of the following statements is false?**
 A) Neurons transmit sensory information to the brain
 B) Both neurons and neuroglia are present in the CNS and PNS
 C) Neurons conduct electrical impulses
 D) All types of cells conduct electrical impulses
- 71. The purpose of the acrosome is**
 A) to protect the sperm nucleus
 B) to secrete certain enzymes which dissolve the sperm cell wall so that the nucleus can escape and fertilize the ovum
 C) to secrete certain enzymes which dissolve the egg brain thus facilitating the entry of the sperm into the ovum
 D) all of these
- 72. The inner lining of the alimentary canal, liver, other digestive glands, lungs etc, in frog is**
 A) Endoderm origin
 B) Mesoderm origin
 C) Ectoderm origin
 D) Endoderm or mesoderm origin
- 73. Mesoderm, which lies below the embryonic disc is known as the**
 A) Intra-embryonic mesoderm
 B) Extra-embryonic mesoderm
 C) Somatic mesoderm
 D) Splanchnic mesoderm
- 74. A phenomenon is termed parthenogenesis when**
 A) artificial fertilization occurs
 B) egg is fertilized by a sperm
 C) egg undergoes cleavage without fertilization
 D) sperm dies before fertilization
- 75. Termination of gastrulation is marked by**
 A) obliteration of archenteron
 B) closure of neural tube
 C) obliteration of blastocoel
 D) closure of blastopore
- 76. Consider the following statements and choose the correct answer from the options that follow:**
Statement I : The placenta in humans is the true placenta in which foetal and maternal parts cannot be separated easily without causing bleeding
Statement II : Placenta in humans is the type known as haemochorial
Now select your answer according to the coding scheme given below :
 A) Both the statements I and II are correct
 B) Both the statements I and II are wrong
 C) Statement I is correct, but II is wrong
 D) Statement I is wrong, but II is correct
- 77. If husband and wife have normal vision, but fathers of both were colourblind, probability of their first daughter to be colourblind is**
 A) 100% B) 50% C) 0% D) 25%
- 78. Agglutinogens A and B found in the blood groups are related with**
 A) Blood plasma
 B) Plasma membrane of WBCs
 C) Plasma membrane of RBCs
 D) Blood platelets
- 79. A man is haemophilic. It indicates that he**
 A) is carrying a blood parasite
 B) has inherited this condition from mother
 C) has inherited this condition from father
 D) has little amount of blood
- 80. Intersex Drosophila melanogaster has**
 A) two sets of autosomes and two X-chromosomes
 B) one set of autosomes and two X-chromosomes
 C) three sets of autosomes and two X-chromosomes
 D) three sets of autosomes and two Y-chromosomes
- 81. Genetic drift**
 A) is an orderly in gene frequencies
 B) has nothing in common with inbreeding
 C) produces great fluctuations in large populations
 D) is a random change in gene frequencies
- 82. Darwin observed variations in beak structure of finches of Galapagos archipelago due to adaptations for different modes of feeding. This gave the evidence of**
 A) Intraspecific competition
 B) Interspecific competition
 C) Intraspecific variations
 D) Speciation due to natural selection
- 83. Flowers of certain orchids resemble females of certain insects in shape. Male insects take these flowers as females and try to copulate, but instead these only pollinate the flowers. This process is called**
 A) Pseudopollination B) Mimicry
 C) Pseudoparthenocarpy D) Pseudocopulation
- 84. Which evidence does not favour Lamarckian Concept of Inheritance of Acquired Characters?**
 A) Melanization in peppered moth in industrial areas
 B) Lack of pigments in cave-dwelling animals
 C) Absence of limbs in snakes
 D) Presence of webbed toes in aquatic birds
- 85. Which of the following statements is correct?**
 A) Australopithecus was direct ancestor of man
 B) Fossils of Dryopithecus were found in Ethiopia
 C) Neanderthal was direct ancestor of Homo sapiens
 D) Homo erectus is ancestor of man
- 86. Which one is the correct statement about human races?**
 A) Different human races cannot interbreed
 B) Some human races can interbreed
 C) All human races can interbreed and produce fertile offspring
 D) All human races can interbreed, but cannot produce fertile offspring
- 87. Most important human activity leading to extinction of wildlife is**
 A) introduction of alien species
 B) pollution of air and water
 C) alteration and destruction of natural habitats
 D) hunting for commercially valuable wildlife products

- 88. A number of natural reserves were created to conserve specific wildlife species. Identify the correct combination from the following :**
 A) Kaziranga – Elephant
 B) Rann of Kutch – Wild ass
 C) Gir forest – Tiger
 D) Manas Wildlife Sanctuary – Musk deer
- 89. Identify the correct match of a tiger reserve and the state in which it is located :**
 A) Corbett – Madhya Pradesh
 B) Palanau – Orissa
 C) Manas – Assam
 D) Bandipur – Tamil Nadu
- 90. Indian rhinoceros is the most important protected species in**
 A) Gir National Park B) Corbett National Park
 C) Bandipur National Park D) Kaziranga National Park
- 91. Value Education means**
 A) Religious Education B) Moral Education
 C) Cost Education D) Economics of Education
- 92. Punishment is**
 A) Reinforcement B) Negative Reinforcement
 C) Positive Reinforcement D) Encouragement
- 93. Growth and development of the child are determined by two factors**
 A) heredity and school B) school and home
 C) home and society D) heredity and environment
- 94. Learning in free atmosphere was advocated by**
 A) Montessori B) Gagne
 C) J. Krishnamurthy D) Gandhiji
- 95. Thematic Apperception Test (TAT) is conducted to test the**
 A) intelligence of a person B) personality of a person
 C) memory of a person D) achievement of a person
- 96. 'There is a tendency for all of us to seek our faults in others' is termed as**
 A) introjection B) repression
 C) projection D) rationalisation
- 97. What is the principle behind individualised instruction?**
 A) Reinforcement and learning
 B) Accommodation
 C) Adaptation
 D) Schemes
- 98. Who advocated the method of 'Learning by doing'?**
 A) A.S.. Neil B) John Dewey
 C) Bertrand Russell D) Kilpatrick
- 99. Which of the following plays the major role in social development of a child?**
 A) School B) Family
 C) Society D) Neighbours
- 100. An objective factor which determines attention in the classroom is**
 A) interest B) novelty
 C) sentiment D) attitude
- 101. A useful teaching-learning method for slow learners is**
 A) Lecture B) Self-learning
 C) Memorising D) Group learning
- 102. There is a story about a fox, who unable to reach some grapes, proclaimed that they were sour. This is a kind of**
 A) intellectualization B) rationalization
 C) negativism D) egocentrism
- 103. Attempts to train defectives and delinquents, so as to make them, as far as possible, useful and efficient members of the community is called**
 A) Remedial instruction B) Programmed instruction
 C) Physical instruction D) Religious instruction
- 104. In an intelligence test a ten year old boy is found to have a mental age of 11. This I.Q. is calculated as**
 A) 100 B) 120 C) 110 D) 90
- 105. DIET stands for**
 A) District Institute for Employment of Teachers
 B) District Institute of Education and Training
 C) District Institute of Elementary Teacher Education
 D) District Institute of Educational Technology
- 106. Self actualisation is defined as "the full development of personal potential" by**
 A) Rotter B) Maslow
 C) McClelland D) Hull
- 107. Educationist Froebel is**
 A) an idealist B) a naturalist
 C) a realist D) a pragmatist
- 108. School started by Madam Montessori was known as**
 A) Children's House B) Boys' School
 C) Summer Hill School D) Girls' School
- 109. MLL represents**
 A) Marginal Level of Learning
 B) Maximum Level of Learning
 C) Motor Learning Level
 D) Minimum Level of Learning
- 110. The name of the educational policy of Gandhiji is**
 A) Social Education B) Basic Education
 C) Technical Education D) Rural Education
- 111. The correct sequence in embryonic development is**
 A) Cleavage, zygote, fertilization, morula, blastula, gastrula
 B) Fertilization, zygote, cleavage, morula, blastula, gastrula
 C) Fertilization, cleavage, morula, zygote, blastula, gastrula
 D) Fertilization, zygote, blastula, morula, cleavage, gastrula
- 112. The role of adenyl cyclase in the membrane of liver cells is to**
 A) stimulate the production of epinephrine
 B) catalyse the synthesis of cyclic AMP
 C) directly activate the enzyme phosphorylase
 D) stimulate the conversion of glucose into glycogen
- 113. If a person is passing out large amount of urine and feeling thirsty, yet his urine has no glucose, then the cause of copious micturition can be**
 A) oversecretion of an anterior pituitary hormone
 B) undersecretion of a hormone from pancreas
 C) undersecretion of a posterior pituitary hormone
 D) oversecretion of a hormone from endocrine pancreas

- 114. According to accepted concept of hormonal action, if receptor molecules are removed from target organs, the latter will**
 A) continue to respond to the hormone but in opposite way
 B) continue to respond to the hormone, but will require higher concentration
 C) continue to respond to the hormone without any difference
 D) not respond to the hormone
- 115. Addison's disease results from**
 A) Hyposecretion of adrenal cortex
 B) Hypertrophy of gonads
 C) Hyperactivity of cells of Leydig
 D) Hypersecretion of adrenal cortex
- 116. Numbers of migratory song birds are declining in North America. Which of the following factors is important for this decline?**
 A) Pollution
 B) Human disruption of breeding behaviour
 C) Habitat fragmentation in the United States
 D) Global climate change
- 117. Most large whale species have been driven to the brink of extinction. Which of the following is the most accepted explanation for this situation?**
 A) Overexploitation
 B) Habitat loss
 C) Pollution
 D) Competition from introduced species
- 118. A keystone species is one that**
 A) has a higher likelihood of extinction than a nonkeystone species
 B) exerts a strong influence on an ecosystem
 C) causes other species to become extinct
 D) has a weak influence on an ecosystem
- 119. Which of the following structures provide strong evidence of organic evolution?**
 A) Gill clefts in vertebrate embryos
 B) Wings in insects, birds and bats
 C) Jointed legs in arthropods and mammals
 D) Excretory organs in earthworms and frogs
- 120. Which one of the following represents a connecting link as an evidence from comparative anatomy in favour of organic evolution?**
 A) Whale between fishes and mammals
 B) Archaeopteryx between birds and mammals
 C) Duckbill platypus between reptiles and mammals
 D) Java apeman between modern man and Peking man
- 121. The outermost zone of a biosphere reserve is called**
 A) Manipulation zone B) Core zone
 C) Buffer zone D) any of these
- 122. The distance between two genes upon a chromosome is measured in cross over units which represent**
 A) ratio of crossing over between them
 B) percentage of crossing over between them
 C) number of other genes between them
 D) total number of genes present in the chromosome
- 123. Persons of blood group AB can receive blood transfusion from anyone regardless of type because**
 A) AB blood group contains neither anti a nor anti b antibodies
 B) AB blood group contains neither antigen A nor antigen B
 C) the Rh factor is always absent in AB blood type
 D) AB blood contains agglutinins against group A and group B blood
- 124. Barr body in mammals represents**
 A) all heterochromatin in female's cells
 B) one of the two X chromosomes in somatic cells of female
 C) all heterochromatin in cells of females and males
 D) Y-chromosome in somatic cells of male
- 125. In which of the following the cranial capacity was the smallest?**
 A) Cro-Magnon B) Neanderthal
 C) Peking Man D) Java apeman
- 126. The value of the variable which occurs most frequently in a distribution is**
 A) Arithmetic mean B) Median
 C) Mode D) Weighted arithmetic mean
- 127. Correlation between two variables shows O. It should be**
 A) perfect correlation
 B) no correlation
 C) high degree of positive correlation
 D) high degree of negative correlation
- 128. If the co-efficient of variation (CV) of a group is greater, it is said that the group is**
 A) more stable B) more consistent
 C) more uniform D) more variable
- 129. An average which divides a distribution into two equal halves is**
 A) Geometric mean B) Harmonic mean
 C) Arithmetic mean D) Median
- 130. may be defined as a systematic change in the frequencies of homologous alleles, chromosome segments or chromosomes in a local population**
 A) Micro-evolution B) Macro-evolution
 C) Mega-evolution D) Pseudo-evolution
- 131. In Indian history, who is known as 'Indian Napoleon'?**
 A) Asoka B) Chandragupta II
 C) Chanakya D) Samudragupta
- 132. Who of the following is associated with the theory of "Laissez-faire" in Economics?**
 A) Malthus B) Marshall
 C) Adam Smith D) Keynes
- 133. The boundary line between India and China is known as**
 A) Radcliffe line B) Durand line
 C) McMahon line D) Maginot line
- 134. Which of the following countries is called the "Land of White Elephants"?**
 A) Malaysia B) Thailand
 C) Canada D) Ethiopia

135. Who was the founder of Brahmo Samaj?

- A) Raja Rammohan Roy B) Rabindranath Tagore
C) Keshab Chandra Sen D) M. G. Ranade

136. Malaria is caused by

- A) Plasmodium B) Virus
C) DNA D) Bacterium

137. Article 14 of the Constitution of India deals with

- A) Equality before law
B) Abolition of untouchability
C) Freedom of speech
D) Freedom of religion

138. Dynamo is a device for converting

- A) electricity to mechanical energy
B) mechanical energy to electrical energy
C) magnetism to electricity
D) electricity to magnetism

139. Which of the following dynasties was not in power during the Sangam age?

- A) Pandyas B) Cheras
C) Cholas D) Pallavas

140. Which country did Italy beat in the finals of the FIFA World Cup 2006?

- A) Germany B) France
C) Portugal D) Spain

141. A period showing no progress in a learning curve is termed as

- A) error B) inhibition
C) plateau D) terminal point

142. Group factor theory of intelligence was proposed by

- A) Spearman B) Thorndike
C) Thurstone D) Guilford

143. I.Q. can be calculated using the formula

- A) $\frac{\text{Chronological Age}}{\text{Mental Age}} \times 100$
B) $\frac{\text{Mental Age}}{\text{Chronological Age}} \times 100$
C) $\frac{\text{Mental Age}}{\text{Chronological Age}}$
D) $\frac{\text{Chronological Age}}{\text{Mental Age}}$

144. Which type of thinking is very essential for creativity?

- A) Positive thinking B) Convergent thinking
C) Practical thinking D) Divergent thinking

145. Robert Gagne's theory of hierarchical learning consists of

- A) 7 types of learning B) 2 types of learning
C) 8 types of learning D) 10 types of learning

146. Which Article of the Constitution of India advocates free and compulsory school education?

- A) Article 354 B) Article 45
C) Article 30 D) Article 31

147. The most effective way of character formation in students is to

- A) advise the students frequently
B) narrate about the lives of great men and women
C) organise religious functions in the school
D) make them sing songs

148. A loud explosion is heard as you are teaching the class. What would you do?

- A) Stay in the class and send the class leader to find the details
B) Walk out of the class to know details
C) Run to neighbouring class for information
D) Advise the students to get away from the class in an orderly manner

149. The agency which helps to improve the quality of school education at state level is

- A) NCERT B) NCTE C) SCERT D) DTE

150. Education leads to the modification of

- A) Attitude B) Behaviour
C) Life D) Interest

TRB PG ASSISTANTS 2006-07 – ZOOLOGY – ANSWERS

1 C	2 B	3 D	4 C	5 A	6 B	7 B	8 C	9 D	10 B
11 C	12 C	13 A	14 D	15 C	16 A	17 D	18 B	19 A	20 C
21 D	22 A	23 B	24 B	25 C	26 C	27 C	28 D	29 C	30 B
31 C	32 B	33 D	34 C	35 A	36 B	37 B	38 C	39 D	40 B
41 B	42 D	43 A	44 B	45 C	46 D	47 B	48 D	49 D	50 C
51 A	52 B	53 B	54 D	55 B	56 D	57 C	58 C	59 C	60 B
61 A	62 B	63 C	64 C	65 C	66 D	67 C	68 D	69 A	70 B
71 C	72 A	73 D	74 C	75 B	76 A	77 C	78 C	79 B	80 D
81 D	82 A	83 A	84 B	85 C	86 D	87 B	88 C	89 A	90 C
91 B	92 B	93 D	94 C	95 B	96 C	97 A	98 B	99 C	100 A
101 D	102 A	103 A	104 C	105 B	106 B	107 B	108 A	109 D	110 B
111 B	112 D	113 C	114 B	115 D	116 C	117 A	118 B	119 B	120 C
121 B	122 A	123 A	124 D	125 A	126 B	127 A	128 C	129 B	130 D
131 D	132 C	133 C	134 B	135 A	136 A	137 A	138 B	139 D	140 B
141 C	142 C	143 A	144 D	145 C	146 B	147 B	148 B	149 A	150 B