

PREVIOUS QUESTIONS PAPERS DU MSC ZOOLOGY (2018)

12. X-chromosome inactivation
- Is the cause of the y chromosome being genetically inactive
 - Takes place in humans so that the same X chromosome is inactive in all the cells of a female
 - Normally takes place in males but not in females
 - Results in genetically turning off one of the two X chromosome in female mammals
13. In ecological succession from pioneer to climax community, the biomass shall:
- Increase and then decrease
 - Increase continuously
 - Decrease
 - No relation
14. Import of glucose by the liver cell:
- Is dependent on hydrolysis of ATP
 - Is facilitated by GLUT2
 - Occurs throughout the phospholipid bilayer
 - Requires expression of GLUT1 on the plasma membrane
15. The origin of the jaw in the gnathostomes is the
- hyoid
 - gill arch
 - notochord
 - bones supporting the cranium
16. The dynamics of which cytoskeletal element changes in a moving amoeba?
- Intermediate filaments
 - MreB
 - Microtubules
 - Microfilaments
17. Repeat core sequences consisting of 2, 3, or 4 base pairs are known as what?
- Single nucleotide polymorphisms (SNPs)
 - Minisatellites
 - Telomeres
 - Microsatellites
18. A haltere is a
- Device used by a male insect to attract female for mating
 - balancing organ of housefly
 - sense organ of butterfly
 - modified forewing of beetle
19. Linolenic (C18: 9,12,15) is an essential fatty acid for human because:
- Lenolenic acid is available in fruits
 - Lenolenic acid gives much energy than palmitic acid
 - It is unsaturated fatty acid
 - Human cannot introduce double bond beyond 9-10 carbon of fatty acids
20. Passive immunity is obtained by:
- Injecting the serum of another animal/individual containing antitoxin
 - Our own body cells preparing antibodies
 - Blood transfusion and blood clotting
 - Drinking medicinal concoctions





33. Lac is a material which is
 (a) hardened fecal matter of lac insect
 (b) protective secretion deposited by female lac insect
 (c) protective covering secreted by larva
 (d) resin secreted by the plant
34. Hardy-Weinberg's law gives the concept of
 (a) natural selection. (b) genetic drift
 (c) genetic equilibrium (d) mutation
35. The vertical migration of plankton is an instance of
 (a) Circadian rythmes (b) Circannual rythmes
 (c) photopriodism (d) photokinesis.
36. Treadmilling of actin filaments in the steady state occurs at G-actin concentration
 (a) Below the Cc of the (-) end
 (b) Above the Cc of the (-) end but below the Cc of the (+) end
 (c) Above the Cc of the (+) end but below the Cc of the (-) end
 (d) Above the Cc of the (+) end
37. Exon skipping is associated with:
 (a) regulatory mutations (b) RNA processing mutations
 (c) nonsense mutations (d) silent mutations
38. Bile is produced in our body which
 (a) Act as a surfactant to emulsify lipids in intestine.
 (b) It has no role associated with our body
 (c) Helps in digestion of starch in intestine
 (d) Helps in controlling blood pressure
39. The inner cell mass of mammalian blastocyst develops into,
 (a) all embryonic structures (b) embryonic endoderm
 (c) chorio-allantoic placenta (d) yolk-sac placenta
40. The isoform/s of actin present in muscle cells
 (a) beta-actin (b) beta-and gamma-actin
 (c) alpha-actin (d) alpha and beta-actin
41. The four postulates of the Chemiosmotic hypothesis accounted for:
 (a) ETC, F1-F0 ATPase, cardiolipin and pmf generators
 (b) ETC, F1-F0 ATPase, cardiolipin and anion exchangers
 (c) Cardiolipin
 (d) The four complexes of the electron transport chain (ETC).
42. Cilia and flagella contains a contractile protein called:
 (a) Myosin (b) Tubulin (c) Actin (d) Dyenin
43. Insects such as Drosophila undergo three molts before undergoing metamorphosis. Molting is controlled by which of the following hormone?
 (a) juvenile hormone (b) growth hormone (c) auxin (d) ecdysone







70. Schizocoelic phyla are
 (a) Annelida, Arthropoda, and Mollusca
 (b) Arthropoda, Mollusca and Echinodermata
 (c) Platyhelminthes, Aschelminthes and Annelida
 (d) Protozoa, Porifera, Cnidarians, and Platyhelminthes
71. In terrestrial vertebrates, which of the following structures did not arise from the pharyngeal pouches?
 (a) intervertebral discs (b) Eustachian tube
 (c) parathyroid gland (d) middle ear
72. Species inhabiting in different geographical regions are known as
 (a) allopatric (b) biospecies (c) sibling species (d) sympatric
73. Frog oocytes do not swell in hypotonic solutions. The most plausible explanation for this is the absence of:
 (a) Aquaporins (b) K⁺ channels (c) Na⁺ channels (d) Na⁺ K⁺ ATPase
74. Nucleosome core is a structural unit of chromomatin
 (a) consisting of 8 histones molecules and a specific length of DNA
 (b) consisting of 8 histones molecules and a specific sequence of DNA
 (c) consisting of 4 histones molecules and a specific length of DNA
 (d) consisting of 4 histones molecules and a specific sequence of DNA
75. Melting temperature (T_m) of double stranded DNA increases with
 (a) Increases by modified bases (b) Increase in number of adenine/thymine bases
 (c) Increase number of guanine/cytosine bases (d) Bases have no effect on T_m of DNA
76. Unfolded or misfolded proteins are degraded in:
 (a) Golgi (b) Endoplasmic reticulum
 (c) Mitochondria (d) Proteasomes
77. Which of the following communicable diseases is NOT transmitted by Aedes?
 (a) Dengue haemorrhagic fever (b) Yellow fever
 (c) Chikungunia (d) Sleeping sickness
78. Which of the following is semiautonomous organelle?
 (a) Golgi complex (b) Mitochondria (c) Nucleus (d) Ribosomes
79. Match the following. Select the correct answer using the codes given below :

A. Phylum	1. Anura
B. Class	2. Ranidae
C. Order	3. Chordata
D. Family	4. Amphibia

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



80. Match the list-I with list-II and select the correct answer using codes given below:

List - I	List - II
A. <i>Taenia</i>	1. Hexacanth
B. <i>Obelia</i>	2. Glochidium
C. <i>Unio</i>	3. Planula
D. <i>Balanoglossus</i>	4. Tornaria
	5. Miracidium

	A	B	C	D
(a)	2	5	3	4
(b)	3	2	1	5
(c)	1	2	3	5
(d)	1	3	2	4

81. Match the following stains used for staining given sub cellular architecture/molecule/organelles.

A. Ganus Green	1. Cytoplasm
B. Methyl blue	2. Centriole
C. Feulgen	3. Mitochondria
D. Iron Haematoxylin	4. DNA

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

82. The pH of a 10-8 M hydrochloric acid solution would be

83. If a colour blind female marries a normal male, their children will be

84. Y-shaped chaveron bone is present in

85. The heart is not ventral in position in

86. What would be the phenotype of *E. coli* for lac-operon, if the genotype is i+ o- z- y+ a+?

- (a) It would be repressed but inducible by IPTG.
 - (b) It would be repressed and not induced by IPTG.
 - (c) It would show constitutive expression of structural genes
 - (d) It would show constitutive expression of structural genes
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87. Non-disjunction means:
- one chromosome being lost
 - loss of a part of chromosome
 - duplication of a segment of a chromosome
 - failure of chromosome pairs to separate during anaphase
88. Marsupial mammals moved from South America to Australia via
- Antarctica
 - Madagascar
 - the Galapagos Archipelago
 - Africa
89. Gap junctions are not essential for:
- Skeletal muscle contraction
 - Metabolic coupling
 - Peristalsis
 - Transfer of second messengers
90. Bilateral symmetry is seen in the body organization of
- annelids, arthropods and vertebrates
 - Vertebrates only
 - Vertebrates, annelids, arthropods, and cnidarians
 - Only chordates
91. The absorbance of UV light (280nm) by a protein is largely due to the presence of amino acids with
- Acidic R group
 - Aromatic R group
 - Basic R group
 - Aliphatic R group
92. The name of the process by which oil glands in mammalian skins secrete oils is:
- holocrine secretion
 - osmosis
 - apocrine secretion
 - active transport
93. The transition from water to land in the evolution of land vertebrates occurred during:
- Cambrian
 - Devonian
 - Jurassic
 - Carboniferous
94. The alarming rate of depletion of biodiversity in recent years is mostly due to
- ozone depletion.
 - pollution by pesticides and heavy metals
 - global warming
 - habitat destruction
95. The scales in shark belong to the type
- Cycloid
 - Ctenoid
 - Ganoid
 - Placoid
96. The term tunicate makes reference to the urochordate test, or tunic, which is composed of
- cellulose
 - calcium carbonate
 - silicon dioxide
 - chitin
97. The notochord does not persist throughout life in
- Tunicates
 - Amphioxus
 - Petromyzon
 - Myxine
98. At what stage of eukaryotic cell cycle you would expect the DNA to be least compact?
- G I-Phase
 - Leptotene
 - S-Phase
 - Mitosis
99. Nicotinamide adenine dinucleotide phosphate is generated in
- Fatty acid degradation pathway
 - Glycolysis
 - Pentose Phosphate pathway
 - Tricarboxylic acid pathway
100. Haemophilia or bleeder's disease is due to a defective gene which does not produce:
- Thromboplastin
 - Prothrombin
 - Fibrinogen
 - Calcium salts

