

ZOOLOGY 2017

- 1. Enzyme catalyzing rearrangement of atomic groupings without altering molecular weight of number of atoms is:**
 - (1) Ligase
 - (2) Isomerase
 - (3) Oxidoreductase
 - (4) Hydrolase
- 2. Most of the members of vitamin B complex act as:**
 - (1) Cofactor
 - (2) Coenzyme
 - (3) Prosthetic group
 - (4) Apoenzyme
- 3. Which of the following is tick borne viral disease?**
 - (1) Babesiosis
 - (2) Yellow fever
 - (3) Bengue hemorrhagic fever
 - (4) Plague
- 4. Which of the following exhibits complete metamorphosis?**
 - (1) Mayfly
 - (2) Mealy bug
 - (3) Beetle
 - (4) Dragonfly
- 5. Which of the following is not a congenital disease?**
 - (1) Sickle cell anaemia
 - (2) Albinism
 - (3) Haemophilia
 - (4) Hepatitis
- 6. The Barr bodies are made up of:**
 - (1) Constitutive euchromatin
 - (2) Facultative euchromatin
 - (3) Constitutive heterochromatin
 - (4) Facultative heterochromatin
- 7. Which of the following organs develops first in mammals during embryonic growth?**
 - (1) Notochord
 - (2) Liver
 - (3) Heart
 - (4) Kidneys
- 8. Marsupial mammals moved from South America to Australia via:**
 - (1) Antarctica
 - (2) Africa
 - (3) Galapagos Archipelago
 - (4) Madagascar
- 9. When a man and woman carrying the allele for phenylketonuria but not having this disease marry and have a normal child without disease, then what is the probability that their child is a carrier of this disease?**
 - (1) 0.25
 - (2) 0.50
 - (3) 0.75
 - (4) 1.00
- 10. Which of the following are the stages of respiration in the correct order?**
 - (1) Gaseous transport, breathing, tissue respiration and cellular respiration
 - (2) Breathing, gaseous transport, tissue respiration and cellular respiration
 - (3) Breathing, gaseous transport, cellular respiration and tissue respiration
 - (4) Breathing, tissue respiration, cellular respiration and gaseous transport
- 11. Binding of antigen to antibody is through:**
 - (1) Disulphide bridges
 - (2) Amide formation
 - (3) Covalent bonds
 - (4) Electrostatic interactions
- 12. Cells of immune system that cause pore formation in the infected target cell are:**
 - (1) Helper T-cells
 - (2) Killer T-cells
 - (3) Suppressor T-cells
 - (4) B-cells
- 13. Conversion of antigen into harmless insoluble matter by antibodies is:**
 - (1) Agglutination
 - (2) Opsonisation
 - (3) Neutralisation
 - (4) Activation
- 14. Which one does help in differentiation of cells of immune system?**
 - (1) Cortisol
 - (2) Thymosin
 - (3) Steroid
 - (4) Thyroxine
- 15. Immunity acquired by infant from mother through milk is:**
 - (1) Active immunity
 - (2) Passive immunity
 - (3) Cellular immunity
 - (4) Innate nonspecific immunity

16. **Inhibiting enzyme action by blocking its active sites is:**
 (1) Allosteric inhibition
 (2) Feedback inhibition
 (3) Competitive inhibition
 (4) Non-competitive inhibition
17. **The process of early development in which the three germ layers form is called:**
 (1) Fertilisation
 (2) Cleavage
 (3) Gastrulation
 (4) Organogenesis
18. **How many chambers are there in the heart of the frog tadpole?**
 (1) One
 (2) Two
 (3) Three
 (4) Four
19. **When protein synthesised by one cell can diffuse over a small distance to induce change in neighbouring cell, the event is called as:**
 (1) Paracrine
 (2) Juxtacrine
 (3) Autocrine
 (4) Endocrine
20. **Eukaryotic RNA polymerase(s) that is/are most sensitive to α -amanitin:**
 (1) RNA Pol I
 (2) RNA Pol II
 (3) RNA Pol III
 (4) RNA Pol I and III
21. **Which enzyme is most frequently used in polymerase chain reaction?**
 (1) Taq polymerase
 (2) DNA polymerase
 (3) RNA polymerase
 (4) Ligase
22. **Southern Blot Analysis/Hybridization is used for detection of specific:**
 (1) DNA sequence
 (2) RNA sequence
 (3) Protein
 (4) Carbohydrates
23. **Metaphase chromosomes are classified based on the following characteristics:**
 (1) Centromere length
 (2) Centromere position
 (3) Telomere length
 (4) Telomere position
24. **Antibody detected in largest amount during secondary immune response is:**
 (1) IgM
 (2) IgG
 (3) IgA
 (4) IgD
25. **The tidal volume in a normal man at rest is about:**
 (1) 0.5 L
 (2) 1.2 L
 (3) 2.5 L
 (4) 4.9 L
26. **The type of body cavity seen in the roundworms is called a/an:**
 (1) Coelom
 (2) Acoelom
 (3) Pseudocoelom
 (4) Gastrovascular cavity
27. **Which one of the following animal groups belongs to the same class?**
 (1) Earthworm, Lumbricus, leech
 (2) Spider, louse, millipede
 (3) Cuttlefish, ammonites, squids
 (4) Silverfish, crayfish, razor fish
28. **Of the following ecological relationships, which one is the most different from the other three?**
 (1) Algae embedded in coral tissues
 (2) Salmonella in human gastric tract
 (3) Cellulolytic bacteria in a termite gut
 (4) Pollen-collecting bees visiting flowers
29. **Which of the following evolutionary process is random?**
 (1) Gene flow
 (2) Mutation
 (3) Genetic drift
 (4) Speciation
30. **The Southern blot technique involves the following major steps:**
 1. Hybridization and autoradiography
 2. Blotting
 3. Restriction enzyme digestion
 4. Electrophoresis
Which of the following sequences of steps best illustrates this technique?
 (1) 1, 2, 3, 4
 (2) 1, 3, 2, 4
 (3) 3, 2, 4, 1
 (4) 3, 4, 2, 1

31. **Kozak sequence is associated with:**
 (1) Transcription
 (2) Repair of DNA
 (3) Translation initiation
 (4) Replication
32. **Which of the following processes is not an example of allosteric regulation?**
 (1) Regulation of phosphofructokinase activity by fructose 2, 6-bisphosphate
 (2) Inactivation of nitrogenase by ADP-ribosylation
 (3) Regulation of the lac operon by allolactose in *E.coli*
 (4) Catabolite repression by CAP in *E.coli*
33. **Identify the statement that is not true for facilitated diffusion. This process**
 (1) Is faster than simple diffusion
 (2) Exhibits saturation kinetics
 (3) Is not selective
 (4) Can be inhibited by agents known to denature proteins
34. **All of enzymes of the TCA cycle are located in the mitochondrial matrix except:**
 (1) Citrate synthase
 (2) α -ketoglutarate dehydrogenase
 (3) Succinate dehydrogenase
 (4) Fumarase
35. **Chloramphenicol inhibits:**
 (1) Cell wall synthesis in bacteria
 (2) Protein synthesis on 70S ribosome
 (3) Protein synthesis on 80S ribosome
 (4) DNA replication
36. **If individuals of genotype AaBbCc are intercrossed, how many different F₂ phenotypes can appear assuming complete codominance at all loci?**
 (1) 8
 (2) 64
 (3) 27
 (4) 9
37. **ATP can be formed from ADP using following enzyme:**
 (1) Adenylate kinase
 (2) Hexokinase
 (3) Glucokinase
 (4) Pyruvate kinase
38. **Melting temperature (T_m) of double stranded DNA increases with:**
 (1) Increase in number of guanine/cytosine bases
 (2) Increase in number of adenine/thymine bases
 (3) Random increase in any type of base
 (4) Decrease in number of bases
39. **Which of the following is the precursor for steroid hormones?**
 (1) Tryptophan
 (2) Cholesterol
 (3) Stearic acid
 (4) Glycogen
40. **Transcription factors bind specific sequences of DNA to:**
 (1) protect the DNA from attack of nucleases
 (2) synthesize a strand of DNA
 (3) regulate mRNA synthesis
 (4) alter catalytic efficiency of enzymes
41. **In animals Nicotinamide adenine dinucleotide phosphate is generated in:**
 (1) Pentose Phosphate pathway
 (2) Glycolysis
 (3) Tricarboxylic acid Pathway
 (4) Fatty acid degradation Pathway
42. **Both Hexokinase and Glucokinase phosphorylate glucose but:**
 (1) K_m for hexokinase is same as glucokinase
 (2) K_m for hexokinase is more than glucokinase
 (3) K_m for hexokinase is less than glucokinase
 (4) Both are same enzyme with different name
43. **Motor proteins that bind to the cytoskeleton of an animal cell produce various intracellular movements. Which one of the following has no known motor proteins?**
 (1) Microtubules
 (2) Microfilaments
 (3) Intermediate filaments
 (4) Stress fibres
44. **In the classic Meselson and Stahl experiment the technique used to analyse *E.coli* DNA was:**
 (1) Differential centrifugation
 (2) Equilibrium density centrifugation
 (3) Rate zonal centrifugation
 (4) Agarose gel electrophoresis

45. Which of the following statements is not true for the nuclear pore complex (NPC)?
- (1) The NPC exhibits an eight - fold symmetry
 - (2) Molecules of 20-40 kDa diffuse through the NPC
 - (3) Nuclear localization signals present on the nucleoporins are recognized by importins
 - (4) The localization of Ran-GEF in the nucleus and Ran-GAP in the cytoplasm ensures that transport across the NPC is unidirectional
46. The extracellular matrix in the dermis of the skin is synthesized by the:
- (1) Epidermal cells
 - (2) Fibroblasts
 - (3) Mast cells
 - (4) Basal epithelium
47. A defect in which one of the following junctions would affect transepithelial transport of glucose from the intestinal lumen into the blood?
- (1) Tight junctions
 - (2) Gap junctions
 - (3) Adherens junctions
 - (4) Adhesion junctions
48. Estrous cycle in rat is an example of:
- (1) Circadian rhythm
 - (2) Infradian rhythm
 - (3) Ultradian rhythm
 - (4) Diurnal rhythm
49. The term 'Zeitgeber' is used for:
- (1) Time giver
 - (2) Phase shift
 - (3) Acrophase
 - (4) Bathypase
50. The First Asian to win Nobel prize in Medicine and Physiology is:
- (1) Hargovind Khorana
 - (2) Susumo Tonegawa
 - (3) Yoshinori Ohsumi
 - (4) Shinya Yamanak