

Zoology - 2010

M.Sc. Zoology

- Which of the following carbohydrate combinations are collectively known as oligosaccharides ?
 - Disaccharides to Polysaccharides
 - Trisaccharides to Pentasaccharides
 - Disaccharides to Hexasaccharides
 - Disaccharides to Tetrasaccharides
- The number of D-glucose molecules which join together to form a single glycogen molecule is about :
 - 1000
 - 2000
 - 3000
 - 4000
- Nucleic acids which are complex molecules and larger than most protein molecules contain :
 - Carbon, hydrogen, calcium, nitrogen and phosphorus
 - Carbon, hydrogen, calcium, oxygen and phosphorus
 - Carbon, hydrogen, nitrogen, oxygen and phosphorus
 - Carbon, hydrogen, nitrogen, sulphur and phosphorus
- Of the total RNA, transfer RNA (tRNA) make about :
 - 15%
 - 25%
 - 35%
 - 45%
- Cytoplasm, an aqueous crystallized and colloidal solution has viscosity greater than water by :
 - Two times
 - Three times
 - Four times
 - Five times
- Which of the following statements about intestinal worm is inaccurate ?
 - Intestinal worms are parasitic
 - Intestinal worms usually have secondary hosts
 - Intestinal worms produce a large number of offspring in their hosts
 - Intestinal worms derive their food from their host
- The fact that the Rh factor is found in the blood of rhesus monkeys as well as in human blood indicates that
 - human blood is identical to monkeys blood
 - humans and monkeys may have a common ancestor
 - humans descended from monkeys
 - rhesus monkeys are related to humans but not to other monkeys

8. Animals which produce one or two egg cells during a single reproductive cycle are most likely to have :
- (a) external fertilization and much parental care of the young
 - (b) external fertilization and little parental care of the young
 - (c) internal development and little parental care of the young
 - (d) internal fertilization and much parental care of the young
9. The follicle stimulating hormone (FSH) of vertebrates :
- (a) is secreted by the ovary
 - (b) has no effect in the male
 - (c) has no effect in the female
 - (d) causes the follicle to develop in the female and sperm to develop in the male.
10. Which one of the following combinations most completely expresses the products of oxidation of a carbohydrate ?
- (a) carbon dioxide, urea, mineral salts
 - (b) energy, mineral salts, carbon dioxide
 - (c) energy, water, carbon dioxide
 - (d) glucose, energy, urea
11. Which part of the brain is concerned with learning ?
- (a) Pineal body
 - (b) Optic lobe
 - (c) Olfactory lobe
 - (d) Cerebral hemisphere
12. The hormone of parathyroid gland regulates :
- (a) thyroid secretion
 - (b) calcium metabolism
 - (c) the growth rate of a vertebrate
 - (d) respiration rate
13. Activation of amino acids requires the direct participation of :
- (a) messenger RNA
 - (b) chromosomal RNA
 - (c) ribosomal RNA
 - (d) transfer RNA
14. The antigen, Rh, is found in Rhesus monkey and
- (a) in all humans
 - (b) in more than 3/4 of all humans
 - (c) in about half of all humans
 - (d) in about 1/4 of all humans

15. Growth curve in animals is :
- | | |
|-----------------|-------------------|
| (a) Delta curve | (b) Alpha curve |
| (c) Beta curve | (d) Sigmoid curve |
16. Smallest segment of genetic material affected by mutation is :
- | | |
|-----------|-------------|
| (a) Recon | (b) Cistron |
| (c) Muton | (d) Exon |
17. The diagram/s used to depict the statistical data in the form of frequency of distribution is/are :
- | | |
|----------------|-----------------------|
| (a) Histograms | (b) Frequency polygon |
| (c) Ogive | (d) All of these |
18. The revolution of culturing nutritious aquatic organisms to provide balanced food to the needy is called :
- | | |
|----------------------|--------------------------|
| (a) White revolution | (b) Green revolution |
| (c) Blue revolution | (d) Awareness revolution |
19. Which of the following is not true of singing in male birds ?
- It is done to claim a territory
 - The typical song is characteristic of a species
 - All songs are learned from their parents
 - They generally sing at dawn and dusk
20. Fertilization is accomplished when :
- the sperm has entered the egg
 - egg and sperm nuclei have fused
 - a fertilization membrane has formed around the egg
 - a mature sperm meets a mature egg
21. The most common mating pattern in tapeworms includes :
- Hypodermic impregnation between two worms
 - Self-fertilization within the same proglottid
 - Cross-fertilization between two proglottids of the same worm
 - Cross-fertilization between two different worms
22. In the process of landing, a bird is likely to make most direct use of its :
- | | |
|----------------------|---------------------------|
| (a) sclerotic plates | (b) alulae |
| (c) uropygial glands | (d) nictitating membranes |

23. When a change in chromosome number does not involve the entire set of chromosomes, the situation is referred as :
- (a) Aneuploidy
 - (b) Euploidy
 - (c) Polyploidy
 - (d) None of these
24. Colour vision is sex-linked character and its gene is present in :
- (a) homologous part of Y-Chromosome
 - (b) non-homologous part of Y-Chromosome
 - (c) X-Chromosome
 - (d) both X and Y chromosomes
25. In Holothuroidea, skeleton is mainly comprised of :
- (a) calcareous spicules
 - (b) series of rods
 - (c) primary apical plates
 - (d) whorls of plates
26. The reversal of blood flow is a unique feature met within the animals belonging to :
- (a) Hemichordata
 - (b) Urochordata
 - (c) Cephalochordata
 - (d) Vertebrata
27. In birds, tail feather is also called as :
- (a) rectrices
 - (b) remiges
 - (c) coverts
 - (d) semiplume
28. The Shah Toosh, the world's finest wool is obtained from a Himalayan antelope :
- (a) *Capra sibirica*
 - (b) *Panthalops hodgsoni*
 - (c) *Capra falconeri falconeri*
 - (d) *Ovis amon*
29. Clotting of human blood :
- (a) requires that pepsinogen be present
 - (b) results from fibrin joining with globulin
 - (c) is the result of platelets releasing fibrinogen
 - (d) depends on the formation of the thrombin from prothrombin
30. The trade on Shah Toosh Wool and its products like shawls and scarves are banned world over because :
- (a) the population of the animal has drastically declined
 - (b) China has stopped exporting the animal to other countries
 - (c) you need to kill five animals for making a single shawl
 - (d) the loss of animals habitat

31. Which of the following migratory duck started breeding again in the wetlands of Kashmir after a gap of over one hundred years ?
- mallard duck (*Anas platyrhynchos*)
 - pintail duck (*Anas acuta*)
 - brahminy duck (*Tadorna ferruginea*)
 - wigeon duck (*Anas penelope*)
32. Posterior to segment 15 in earthworm, the number of septal nephridia in each segment ranges between :
- 30-50
 - 55-75
 - 80-100
 - 120-140
33. The fresh water prawn, *Macrobrachium* sp. is widely distributed in :
- tropical countries
 - temperate countries
 - both tropical as well as temperate countries
 - subtropical countries
34. The blood of arthropods is composed of following blood corpuscles :
- ammoebocytes
 - granulocytes
 - thrombocytes
 - all of these
35. Which of the following is the common viral disease of silk worm ?
- Pebrine
 - Flacherie
 - Grassarie
 - Muscardine
36. An organism responsible for causing paralysis in worker honey bees is :
- Aspergillus*
 - Mite
 - Leptomyxa*
 - Isaria*
37. An important commercial species of prawn which attains maximum body size of about 320 mm :
- Pennaeus indicus*
 - Pennaeus monodon*
 - Metapennaeus monoceros*
 - Metapennaeus brevicornis*
38. Net Primary Production (NPP) is equal to :
- Gross Primary Production + loss in respiration
 - Gross Primary Production – loss in respiration
 - Net Community Production + loss in respiration
 - Net Community Production – loss in respiration

39. In each step of energy transfer beyond producer level, the loss of energy is about :
- (a) 20 to 30%
 - (b) 40 to 50%
 - (c) 60 to 70%
 - (d) 80 to 90%
40. Which of the procedure/s be adopted to minimize pollution caused through agriculture inputs ?
- (a) Total ban on the use of compounds with long residual effect
 - (b) Creation of barriers to prevent flow of chemicals in water bodies
 - (c) Plant protection by biological control, wherever possible
 - (d) All of these
41. Snakes have become limbless and developed an elongated body in response to their habit of:
- (a) burrowing
 - (b) climbing
 - (c) coiling the body
 - (d) all of these
42. The modern forms of horses belonging to the genus Equus are the descendant from the :
- (a) Parahippus of Miocene
 - (b) Plesippus of Pliocene
 - (c) Miohippus of Oligocene
 - (d) Orohippus of Eocene
43. The investigation of Mendel remained buried for 35 years till 1900 when the great contribution of Mendel was brought to the lime light by :
- (a) De Vries of Holland
 - (b) Tschermak of Austria
 - (c) Correns of Germany
 - (d) All of these
44. People who are homozygous for sickle-cell gene suffer not only from anaemia but also from such condition/s as :
- (a) kidney damage and spleen enlargement
 - (b) skin lesions
 - (c) early death
 - (d) all of these
45. Animals exhibiting profound adaptations for living beneath the surface of the earth and lead subterranean life are :
- (a) scansorial
 - (b) cursorial
 - (c) fossorial
 - (d) volant

46. The barnacles are usually attached to the shell of the mollusks in a way that barnacle derive benefit while the mollusk is neither helped nor harmed. This association is :
- (a) Mutualism (b) Commensalism
(c) Parasitism (d) Canibalism
47. Erythrocytes are nucleated in all the vertebrates excepting one of the following where it is non-nucleated in mature stage :
- (a) mammals (b) birds
(c) reptiles (d) fishes
48. The sole function of superficial vacuoles in Sarcodina is to help in :
- (a) osmoregulation (b) floatation
(c) cyclosis within the endoplasm (d) excretion
49. Trichocysts are the unique organelle seen only in Holotrichs. In appearance they are :
- (a) pyriform (b) fusiform
(c) cylindrical (d) all of these
50. Two organisms belong to the same species if they :
- (a) have the same chromosome number
(b) have the ability to produce the same antibodies
(c) can mate and produce fertile offspring
(d) go through a similar embryological development
51. The deficiency of Vitamin E in poultry causes :
- (a) Fowl cholera (b) Encephalomalacia
(c) Ceryza disease (d) Pullerum disease
52. Scales which are modifications of the integument and differ from fish scales are found in:
- (a) reptiles only (b) amphibians
(c) reptiles, birds and mammals (d) reptiles and birds
53. An enzyme with a wide range of substrate is :
- (a) amylase, which breaks down any protein
(b) lipase, which breaks down most fats
(c) maltose, which breaks down most sugars
(d) HCl, which breaks down virtually any food.

54. The lysosomes of eukaryotic cells contain :
- (a) enzymes that function in digestion
 - (b) chlorophyll molecules for photosynthesis
 - (c) storehouses of ATP molecules
 - (d) the chromosomes of the organism
55. During digestion, the principal function of water is to :
- (a) act as a solvent for enzymes
 - (b) break down complex nutrient molecules by the process of hydrolysis
 - (c) act as a medium for the storage of simple nutrient molecules
 - (d) dilute simple nutrient molecules and provide more surface area for enzyme action
56. Chemically, mitochondria are composed of :
- (a) Proteins and fats
 - (b) Phospholipids
 - (c) Small amount of RNA
 - (d) All the above
57. Anadromous fishes move from :
- (a) estuary to sea
 - (b) sea to estuary
 - (c) sea to river
 - (d) river to sea
58. A phage that invades but does not destroy the host is known as :
- (a) Temperate phage
 - (b) Sexduction
 - (c) Phycophage
 - (d) Virulent phage
59. If the nucleus of the cell is destroyed, which of these in the cell will not be formed?
- (a) Lysosomes
 - (b) Ribosomes
 - (c) Microtubules
 - (d) Mitochondria
60. A mutation in which there is deletion or insertion of one or a few nucleotides is called :
- (a) Nonsense mutation
 - (b) Base pair mutation
 - (c) Frame shift mutation
 - (d) All of these