MSc(HS/2Yr)(Zoology)

1. Which of the following amino acids has single codon
A) Isoleucine B) Tryptophan C) Valine D) Arginine

2. How many base pairs are there per helical turn in Z-DNA
A) 4 B) 8 C) 10 D) 12

3. DNA foot printing technique is usually used to identify
A) Sites of DNA where DNA binding proteins attach
B) Segment of DNA which code for a specific protein
C) Binding site of RNA polymerase to its promoter region
D) Site of termination of transcription process

4. In which of the following geological period did first bird appeared
A) Permian B) Triassic C) Jurassic D) Cretaceous

5. Michaelis constant is a measure of which one of the following
A) Concentration of enzyme B) Catalytic efficiency of enzyme
C) Thermostability of enzyme D) Affinity of enzyme for its substrate

6. In context of mutations in genetic material, which one of the following is an intercalating agent
A) Colchicine B) Ethidium bromide C) 5-bromouracil D) Rifampicin

7. Which one of the following vitamins has a role in collagen formation
A) Vitamin A B) Vitamin B2 C) Vitamin C D) Vitamin E

8. In Hydra gastrulation occurs by
A) Involution B) Divergence
C) Multipolar Ingression and delamination D) Epiboly

9. In the cell body of Paramecium, the elimination of undigested products takes place through the
A) Vestibule B) Cytostome C) Gullet D) Cytopyge

10. Skeleton secreting cell of the *Sycon* would include
A) Chondroblasts B) Fibroblasts C) Osteoblasts D) Scleroblasts

11. Neopallium appeared for the first time in one group of vertebrates and reaches at high level in another group of vertebrates. The two groups of vertebrates in question are respectively
A) Reptiles and birds B) Amphibians and mammals
C) Birds and mammals D) Reptiles and mammals

12. A competitive inhibitor

A) Increases Km of an enzyme
B) Decreases Km of an enzyme
C) Increases both Vmax and Km of the enzyme
D) Decreases Km but increases Vmax of the enzyme

13. RNA can sometimes be copied to DNA. This process is facilitated by

A) Ribozyme B) RNA polymerase
C) Reverse transcriptase D) RNA primase

14. Which one of the following sub process does not take place during protein synthesis in eukaryotes

A) Translocation of mRNA relative to ribosomes
B) Elongation
C) Methionine formylation
D) Termination

15. Which one of the following cells secrete testosterone

A) Spermatogonium B) Leydig cells
C) Sertoli cells D) Spermatocyte

16. Vasopressin plays a key role in

A) Osmoregulation B) Calcium absorption
C) Lipolysis D) Insulin release

17. Which of the following cell organelle shows acid phosphatase activity

A) Lysosomes B) Golgi complex
C) Rough endoplasmic reticulum D) Nucleolus

18. Taste buds are

A) Interoceptors B) Proprioceptors C) Mechanoreceptors D) Exteroceptors

19. Insertion or deletion of a single base in DNA strand is known as

A) Frameshift mutation B) Missense mutation
C) Nonsense mutation D) Suppressor mutation

20. Which one of the following echinoderms possess a respiratory tree

A) Sea cucumber B) Star fish C) Feather star D) Sea urchin

21. A deletion in short arm of chromosome 5 produces in human a genetic disorder called

A) Cri-du –Chat syndrome B) Down syndrome
C) Edward's syndrome D) Patau's syndrome

22. Three pallial areas namely ,Archipallium, Paleopallium and Neopallium are present in

A) Cyclostomes B) Amphibians C) Reptiles D) Fishes

23. Which cell organelle forms acrosome of the sperm

A) Mitochondria B) Golgi Complex C) Centriole D) Ribosome

24. Indeterminate cleavage occurs in

A) Nematodes B) Frog C) Annelids D) Molluscs

25. Ovulation in vertebrates is induced by

A) Testosterone B) LH C) LTH D) Oxytocin

26. Blastula in echinoderms and Amphioxus is

A) Coeloblstula B) Stereoblastula C) Amphiblastula D) Peribastula

27. Which of the following processes leads to the formation of polytene chromosomes

A) Non disjunction of chromatids during meiosis
B) Recombination between adjacent chromosome segments
C) Sister chromatid exchange
D) Repeated replication without separation of chromatids

28. Trichocysts occur in

A) Hydrozoa B) Porifera C) Protozoa D) Ctenophore

29. Choanocytes in asconoid sponge are present in

A) Incurrent canal B) Excurrent canal C) Atrium D) Radial canal

30. Which one of the following mollusks does not have either external or internal shell

A) Sepia B) Octopus C) Aplysia D) Doris

31. Which one of the following groups of Amino acids contain sulphur

A) Cysteine, methionine and cystine B) Arginine, citrulline and ornithine
C) Glycine, proline and serine D) Leucine, lysine and methionine

32. Ecdyosone , the moulting hormone in insects is liberated from

A) Corpora cardiac B) Prothoacic gland
C) Corpora allata D) X-organ

33. The fertilization cone that pulls the sperm into egg is formed from

A) Acrosome of sperm B) Acrosomal process
C) Vitelline layer of egg D) Plasma membrane of egg

34. Animals which can tolerate wide ranges of salt concentration are called Rest on bottom of water

A) Euryhaline B) Stenohaline C) Catadromous D) Anadromous

35. Centrum in 9^{th} vertebra of frog is

A) Procoelus B) Opisthocoelus C) Heterocoelus D) Acoelus

36. Which of the following enzymes is not proteinaceous in nature

A) Rennin B) Ribozyme C) Pepsin D) Trypsin

37. Cerebrospinal fluid is produced by

A) Neopallium B) Cerebellum C) Basal ganglion D) Choroid plexus

38. The function of allantois in birds is

A) Excretion and nutrition B) Excretion and protection of embryo

C) Respiration and nutrition D) Excretion and respiration

39. Allopatric speciation occurs when population shows

A) Reproductive isolation B) Ecological isolation

C) Seasonal isolation D) Geographic isolation

40. Which of the following is neither fish nor snake

A) Anguilla B) Typhlops C) Ophiosaurus D) Ichthyophis

41. Intervening sequences of a gene are called

A) Introns B) Exons C) Cistrons D) Codons

42. Hydrolytic enzymes in a eukaryotic cell are present in

A) Cytoplasmic matrix B) Mitochondria

C) Ribosomes D) Lysosomes

43. The earliest known jawless fossil vertebrates with heavy armour of dermal plates are collectively called as

A) Placoderms B) Ostracoderms C) Acanthocephalans D) Arthrospira

44. Which of the following metazoan phyla are grouped under radiata

A) Mollusca and echinodermata B) Arthropoda and porifera

C) Coelenterata and ctenophore D) Mollusca and coelenterata

45. Which of the following is a fresh water sponge

A) Spongilla B) Scypha C) Pheronema D) Oscarella

46. Glochidium and velliger are larval forms of

A) Sea urchin B) Nereis C) Asterias D) Bivalves

47. Germinal centres found in lymph node and spleen stimulates the secretion of

A) Support the development of immature B and T cells

B) Function in the removal of damaged erythrocytes from circulation

C) Act as the major source of stem cells and help to maintain hematopoiesis

D) Are sites of antigenic stimulation of mature B cells

48. Uropygial gland is present in

A) Frog B) Echidna C) Pigeon D) Snake

49. Tiedman's body in *Asterias* is concerned with

A) Reproduction B) Excretion
C) Production of amoebocytes D) Digestion

50. Thermoregulatory centre in mammals is located in

A) Pons varolli B) Floccular lobes
C) Hypothalamus D) Corpus callosum

51. In which one of the following stages of mitosis is the maximum chromosomal condensation observed

A) Cytokinesis B) Prophase C) Metaphase D) Anaphase

52. The first human hormone produced by rDNA technology was

A) Cortisol B) Glucagon C) Insulin D) Epinephrine

53. Heteromorphic nuclei occur in

A) Muscle cells B) Human germ cells
C) Neurons D) Ciliated protozoa

54. Zoological name of sea hare is

A) Aplysia B) Aphrodite C) Chaetopterus D) Doris

55. Which one of the following is free swimming larval stage of *Fasciola*

A) Sporocyst B) Redia C) Metacercaria D) Miracidium

56. Rotational cleavage occurs in

A) Insects B) Ascidians C) Mammals D) Amphibians

57. Mesoderm does not give rise to

A) Muscular system B) Nervous system
C) Circulatory system D) Gonads

58. Unio belongs to class

A) Scaphopoda B) Peleceypoda C) Amphineura D) Gastropoda

59. Aristotl's lantern is found in the class

A) Holothuroidea B) Echinoidea C) Ophiuroidea D) Crinoidea

60. Chewing and lapping type of mouth parts are found in

A) Butterflies and moths B) Honeybees and bumble bees
C) Grasshoppers and cockroaches D) Mosquitoes

61. Complete metamorphosis or holometabolous development following stages are present

A) Egg , nymph ,adult B) Egg ,naiads and adults
C) Egg and adult D) Egg, larva , pupa and adult

62. In which of the following sweat glands are absent

A) Spiny anteaters B) Cats
C) Rabbits D) Kangaroo

63. Which of the following is Opisthocoelus vertebra
A) 8^{th} vertebra of frog B) Vertebrae of fishes
C) All vertebrae of mammals D) Cervical vertebrae of some ungulates

64. In crocodiles stomach is divided into
A) Cardiac, fundus and pyloric regions B) Rumen ,reticulum and omasum
C) Proventriculus and ventriculus D) Rumen , omasum and abomasum

65. Which of the following is not a sensory cranial nerve
A) I B) VI C) VIII D) II

66. Which of the following is unpaired air sac of a bird
A) Interclavical B) Anterior thoracic C) Posterior thoracic D) Abdominal

67. Stomach is straight in
A) Turtle B) Rabbit C) Pigeon D) Salamander

68. Four aortic arches are present in adult
A) Petromyzon B) Mammals C) Urodeles D) Elasmobranchs

69. Hyostylic jaw suspension is found in
A) Amphibians B) Lung fishes C) Bony fishes D) Chimaeras

70. Mucus glands are absent in skin of
A) Fishes B) Amphibians C) Cyclostomes D) Mammals

71. All the following are characteristics of both Class I and class II MHC except
A) They are expressed codominantly
B) They are expressed constitutively on all nucleated cells
C) They are glycosylated polypeptides with tertiary domain structure
D) They present antigens to T-cells

72. Which of the following is not a crustacean larva
A) Nauplius B) Zoaea C) Phyllosoma D) Brachiolaria

73. Red data book are directories of endangered species compiled by
A) International Union for the Conservation of Nature (IUCN)
B) World Wild Life Fund (WWF)
C) National Museum of Natural History (NMNH)
D) United Nations Organization (UNO)

74. All the biological communities depend upon energy made available to it through the activity of

A) Decomposers B) Heterotrophs C) Autotrophs D) Microbes

75. Enzymes for the urea cycle are present in

A) Mitochondria of liver cells
B) Cytosol of liver cells
C) Lysosomes of liver cells
D) In both cytosol and mitochondria of liver cells

x-x-x