ZOOLOGY

UNIT-I

Biology of Non-Chordates and Chordates

Protozoan parasites of man,Helminth parasites of man and parasitic adaptations,Larval forms of Crustaceans and Echinoderms, Comparative study of respiration and excretion ininvertebrates, Affinity of Protochordates,Parental care in Pisces and Amphibians, Origin of Tetrapoda, Flight adaptationin birds,, Aquatic mammals and theiradaptations, Comparative study of blood Vascular System and Urinogenital System of Vertebrates.

UNIT-II

Cell Biology, Genetics, Molecular Biology, Microbiology

Ultrastructure and functions of cell organelles, Cell cycle andCell division, Programmed Cell death, Gene interaction, Human Genome Project, Chromosomal aberrations and theirgenetic consequences,DNA and RNA,Synthesis and processing of mRNA, Regulation of gene expression, GeneticCode, Bacteriophage, structure and Reproduction of a Typical Bacterium.

UNIT-III

Physiology, Biochemistry, Endocrinology, Immunology

Transport of respiratory gases, Blood Coagulation,Mechanism of Urine Formation in Man, Conduction of nerve impulses and synaptic transmission, three dimensional structure of Proteins, Metabolism of Proteins, Carbohydrates and Nucleic Acids, Hormones and Mechanism of Hormone Action in Man, Human and immune system.

UNIT-IV

Evolution, Ecology, Economic Zoology, Developmental Biology, Animal Taxonomy

Modern synthetic theory of evolution, Environmental Pollution (Air, Water, Soil, Noise, Thermal, Nuclear), Biodiversity and its Conservation, Induced breeding in Carps, Pearl Culture, Gametogenesis, Fertilization and embryonic development up to three germ layers, Embryonic induction, Regeneration, Stem-Cell Biology, Species Concept, Modern trends inTaxonomy, Rules of Biological Nomenclature.

UNIT-V

Bio-Technology, Instrumentation AndTechniques,Biostatistics, Ethology

Recombinant DNA technology and Gene Cloning, Principles and Techniques of Polymerase Chain Reaction, Interferons, Animal cloning, Transgenic animals, Spectrophotometry, Electrophoresis, Electron Microscopy, Tissue Fixation and Microtomy, Blotting Techniques, Tests of significance ('t' and Chi – Square tests),Correlation and Regression, Pheromones,Biological Clock, Instinct and learning.

MODEL QUESTIONS (ZOOLOGY)

1. Plasmodium belongs to the class:
   a) rhizopoda b) sporozoa c) flagellata d) ciliophora
2. The conversion of ammonia into urea occurs in :
   a) intestine b) spleen c) kidney d) liver
3. Various heart is found only in :
   a) fishes b) birds c) frogs d) reptiles
4. Respiratory organs of insects are :
   a) Kidney b) malpighian tubules c) trachea d) malpighian corpuscles
5. The disease caused by Wuchereriabancrofti is :
   a) Malaria b) elephantiasis c) amoetric dysentery d) Pneumonia
6. When an inverted chromosomal segment contains the centromere, it is called :
   a) Centric inversion b) Parametric inversion c) Epicentre invention
   d)Pericentric inversion

7. TATA box is a region of thegerm that:
   a) Initiates transcription
   b) Correctly binds DNA polymerase III
   c) Regulates gene expression
   d) Correctly positions RNA polymerase II
8. Transduction is process of :
   a) Translocation of homologous chromosomal segments
   b) Transfer of bacteriophage DNA into a bacterium
   c) Genetic recombination in bacteria by a virus
   d) Gene interaction
9. On which of the following transport mechanisms across plasma membrane, entropy decreases and free energy of the system of the system increases?
   a) Osmosis
   b) Passive transport
   c) Facilitated transport
   d) Active transport
10. Which of the following is not aepistatic gene interaction?
   a) Supplementary gene interaction
   b) Complementary gene interaction
   c) Duplicate gene interaction
   d) Modifying gene interaction
11. Which of the following phenomena quantitatively more important in promoting oxygen transport?
   a) Hamburger Phenomenon b) Bohr's effect c) Haldan's effect d) Hering – Breuer phenomenon
12. Which one of the following is not responsible for maintaining high osmolality of ruralmedulla?
   a) Diffusion of salt from ascending limb of loop of Henle.
   b) Diffusion of salt from descending limb of loop of Henle
   c) Active transport of salts from upper region of ascending limb
   d) Diffusion of urea from collecting duct
13. Which of the following is the final electron acceptor in the electron transport chair functioning in oxidative phosphorylation?
   a) Oxygen b) Water c) Pyruvate d) NAD
14. Which one of the following hormones doesn't require cyclic – AMP as second messenger?
   a) F.S.H. b) L.H. c) Estrogen d) Epinephrine
15. An epitope is associated with which part of the antibody:
   a) The light chain – constant region only
   b) The antibody binding site

c) The heavy chain- constant region only
d) The variable region of heavy chain and light chain combined

16. Sometimes a few species of a particular genius are very similar morphologically but one reproductively isolated. What are such species known as:
a) Sibling species b) Allopatric species c) Monotypic species d) Sympatric species

17. From which germ layer are hepatic cells derived?
a) Mesoderm b) Ectoderm c) Endoderm d) All of the above

18. Which proteins are found in sperm axoneme ?
a) Action and Dynein b) Actin and Collagen c) Tubulin and Dynein d) Dynein and Collagen

19. Point out wrongstatement:
a) Stabilizing selection favours an average phenotype
b) In directional selection genetic variance shifts when a population is expect to environmental changes
c) Disruptive selection is also called diversifying selection
d) Stabilizing selection has the same effect as disruptive selection.

20. Which of the following isa pearl producing fresh water mussel used in India?
a) Penactafucata b) Hyriopsisschlegelli c) Cristariaplicata d) Lamellidensmarginalis

21. Blotting of proteins are done by:
a) Northern blotting
b) Eastern blotting
c) Western blotting
d) Southern blotting

22. Which of the following techniques arantitatively measures the reflection or transmission properties of a material as a function of wave length?
a) Electrophoresis
b) Electron microscopy
c) Spectrophotometry
d) Colorimetry

23. Cosmid refers to:
a) The nucleic acid of bacteria
b) Genetic material of a retrovirus
c) A plant virus
d) A recombinant vector

24. Which of the following tests is used to decide if a set of observed data is according to an expected ratio:
a) t-test
b) Ch – sequence test
c) Z – test
d) ANOVA test

25. Which of the following is not a type of pheromone?
a) Alarmpheromone
b) Food – trail pheromone
c) Sex – pheromone
d) Growthpheromone