

Con. 3166-12.

zoology

KK-2609

28/04/12

(3 Hours)

[Total Marks : 100

Section - I

N.B. : All questions are compulsory.

40 x 01 = 40 Marks

- 1) The setae of earthworms are _____.
 (a) Siliceous (b) Chitinous
 (c) Calcareous (d) Proteinous
- 2) Gastrovascular cavity without partition is found in _____.
 (a) Scyphozoa (b) Hydrozoa
 (c) Anthozoa (d) None
- 3) _____ are living jawless vertebrates.
 (a) Gnathostomes (b) Placoderms
 (c) Cyclostomes (d) Eutherians
- 4) _____ are called as glorified reptiles.
 (a) Mammals (b) Birds
 (c) Fishes (d) Chelonians
- 5) _____ is the most superior first cervical vertebra.
 (a) Xiphoid process (b) Lumbar
 (c) Axis (d) Atlas
- 6) _____ is responsible for denaturation of proteins.
 (a) Change in Temperature (b) Change in pH
 (c) Change in Salt concentration (d) All
- 7) The theory of enzyme action and kinetics was given by _____.
 (a) Michaelis and Haldane (b) Menten and Briggs
 (c) Michaelis and Menten (d) Michaelis and Briggs
- 8) Enzymes having both regulatory as well as active sites are called _____.
 (a) Anti-enzymes (b) Allosteric enzymes
 (c) Isoenzymes (d) Inducible enzymes
- 9) Unsaturated fatty acids can be converted to corresponding fatty acids by _____.
 (a) Hydration (b) Dehydration
 (c) Hydrogenation (d) Dehydrogenation
- 10) _____ is the end product of Protein metabolism.
 (a) Urea (b) Ammonia
 (c) Uric acid (d) Citrullin

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- 11) A gene that produces two proteins simultaneously from a long transcript by changing the end point of protein synthesis is known as _____.
- (a) Pseudogene (b) Lethal gene
(c) Nested gene (d) Overlapping gene
- 12) The best stage for cytogenetic study is the _____.
- (a) Prophase (b) Metaphase
(c) Anaphase (d) Telophase
- 13) Mendel's Law of independent assortment is based on the ratio _____.
- (a) 9:7 (b) 9:3:4
(c) 9:3:3:1 (d) 1:1:1:1
- 14) A mechanism that can cause a gene to move from one linkage group to another is ____.
- (a) Translocation (b) Inversion
(c) Crossing over (d) Duplication
- 15) In multiple alleles system, an individual posses only _____.
- (a) One allele (b) Two alleles
(c) Three alleles (d) More than three alleles
- 16) The theory of use and disuse of organ was given by _____.
- (a) Jean Baptistie de Lamarck (b) Alfred Russel Wallace
(c) T. R. Malthus (d) Charles Darwin
- 17) The evolution of the horse began during the epoch _____.
- (a) Miocene (b) Eocene
(c) Oligocene (d) Early Miocene
- 18) The adults of _____ are aerial but their naiads are aquatic.
- (a) Dragon fly (b) Cock roach
(c) Grass hopper (d) Bug
- 19) _____ distillation is used for the purification of mixture in which the components are temperature or heat sensitive.
- (a) Steam (b) Fractional
(c) Simple (d) Vaccum
- 20) _____ is a separation technique in which stationary bed is within tube.
- (a) Column chromatography (b) Paper chromatography
(c) Thin layer chromatography (d) Gel chromatography
- 21) _____ can be used to separate ionic species by their charge and functional forces and hydrodynamic radius.
- (a) Vertical agarose gel electrophoresis
(b) Vertical poly acrylamide gel electrophoresis
(c) Capillary electrophoresis
(d) Pulsed field gel electrophoresis

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22) A single stranded DNA molecule which is complementary to mRNA molecule and is synthesized from it by the action of reverse transcriptase is _____.

- (a) Genomic DNA (b) cDNA
(c) Clone (d) Exon

23) DNA chips or biochips are

- (a) Single stranded DNA chain (b) Double stranded DNA chain
(c) Both a and b (d) None of the above

24) Enzyme TPA present in blood is used for _____.

- (a) Dissolving blood clots (b) Maintaining plasma contents
(c) Clearing turbidity of juices (d) Stimulating thromboplastin production

25) Enzyme immobilization is _____.

- (a) Conversion of active enzyme into inactive form
(b) Provide enzyme with protective covering
(c) Changing soluble enzyme into insoluble state
(d) None of these

26) To optimize the bioreactor system which one of the following condition is least important for anaerobic fermentation?

- (a) Culture agitation to maintain oxygen supply
(b) Restriction of the entry of contaminating organism
(c) Control of parameters like pH and temperature
(d) Maintenance of constant culture volume

27) Polyacrylamide gel electrophoresis is used for DNA sequencing because it _____.

- (a) Can separate different DNAs
(b) Can resolve DNA into small fragments
(c) Can break DNA into small fragments
(d) Can separate purines and pyrimidines

28) A column packed with sieved particles is used in which of the following technique to separate smaller and larger protein molecules?

- (a) Affinity chromatography (b) Gel electrophoresis
(c) Molecular exclusion chromatography (d) All the above

29) The most commonly used technique to detect the presence of HIV is _____.

- (a) FIA (b) RIA
(c) ELISA (d) HPLC

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30) A Vector should have which of the following properties

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|-----|----------------------------|-----|--------------------------------|
| (a) | Small size | (b) | Multiple origin of replication |
| (c) | Multiple restriction sites | (d) | All of the above |

31) A cosmid is a _____.

- | | | | |
|-----|----------------|-----|------------------------------|
| (a) | Circular DNA | (b) | Plasmid with unique cos site |
| (c) | Larger plasmid | (d) | Smaller plasmid |

32) PCR is exclusively used for _____.

- | | | | |
|-----|--------------------|-----|-------------------|
| (a) | DNA identification | (b) | DNA recombination |
| (c) | DNA amplification | (d) | DNA repair |

33) The unique feature of the enzyme Taq polymerase used in PCR is _____.

- | | | | |
|-----|------------------------|-----|-----------------------|
| (a) | High speed | (b) | High fidelity |
| (c) | High thermal stability | (d) | Low thermal stability |

34) Recombinant DNA technology helped in _____.

- | | |
|-----|--|
| (a) | Understanding molecular basis of disease |
| (b) | Understanding location of particular disease |
| (c) | Understanding and diagnosis of many diseases |
| (d) | All of these. |

35) Antibody diversity is generated by _____.

- | | |
|-----|--------------------------------|
| (a) | Protein splicing |
| (b) | Somatic mutation |
| (c) | Allelic exclusion |
| (d) | Interchromosomal recombination |

36) Which one of the following statement is incorrect?

- | | |
|-----|---|
| (a) | The DNA of the mitochondrion is rich in G:C ratio. |
| (b) | Ribosomes are produced in nucleolus. |
| (c) | RBC and mature sperm contain 80S ribosomes. |
| (d) | Size of the nucleus depends on the number of chromosomes. |

37) Sponges are _____.

- | | | | |
|-----|----------------|-----|-------------|
| (a) | Herbivorous | (b) | Carnivorous |
| (c) | Sanguinivorous | (d) | Omnivorous |

38) Cystecercus is the larval stage of _____.

- | | | | |
|-----|-------------|-----|--------|
| (a) | Asterias | (b) | Obelia |
| (c) | Ancylostoma | (d) | Teania |

- 39) The high solubility of amino acids in water is due to _____.
- | | |
|----------------------------|---------------------------------------|
| (a) Presence of side chain | (b) Dipolar ion structure |
| (c) Unipolarity | (d) Hydrophilic nature of amino group |
- 40) The slowest acting known enzyme _____.
- | | |
|--------------|------------------|
| (a) Lysozyme | (b) Carbohydrase |
| (c) Amylase | (d) Lactase |

Section - II

- Attempt any three (03) questions out of five (05) 03 x 10 = 30 marks
- Q. 1 Explain the embryonic development of neurocranium.
- Q. 2 Explain the haplodiploidy in honey bees.
- Q. 3 Describe in brief the albinism and Cysteinurea.
- Q. 4 Explain the Pulsed field electrophoresis.
- Q. 5 Explain the working and application of PCR?

Section – III

- Attempt any two (02) questions out of four (04) 02 x 15 = 30 marks
- Q. 1 Write a phylogeny, salient features and classification of Mollusca.
- Q. 2 Describe the mechanism of enzyme action with reference to
- Fischer's Lock and Key Theory,
 - Koshland's Induced fit Model
- Q. 3 Give an account of structural features of eukaryotic chromosomes.
- Q. 4 Explain different methods of DNA sequencing?