

## SPECIAL PAPER IN ZOOLOGY - 12

- Study of different structures shows homology. Homology is due to
  - Homologous organs arise due to parallel evolution
  - Homologous organs arise due to convergent evolution
  - Homologous organs originate from a common ancestry
  - Homologous organs arise due to divergent evolution
- Genetic drift operates in
  - Small isolated population
  - Large isolated population
  - Fast reproductive population
  - Slow reproductive population
- The building blocks of matter are
  - Molecules
  - Atoms
  - Chemical bonds
  - All of these
- Which of the following fossils belong to the first probable man ?
  - Australopithecus*
  - Zinjanthropus*
  - Paranthropus*
  - Pithecanthropus*
- A cell has 23 pairs of chromosomes just after completion of mitotic telophase. The number of chromatids at the preceding metaphase was
  - 23
  - 46
  - 69
  - 92
- The technique used for separating DNA fragments is
  - Southern blotting
  - Northern blotting
  - Western blotting
  - Southern and Northern blotting
- Drinking of mineral water with very low levels of pesticides (about 0.02 ppm) for long periods may
  - Produce immunity against mosquito
  - Cause leukemia (blood cancer) in most people
  - Cause cancer of the intestines
  - Lead to accumulation of pesticide residues in body fat
- Loss of forests, urbanization, increasing pollution all are due to
  - Population explosion
  - Ozone depletion
  - Global warming
  - Green house effect
- One hundred percent literate state in India is
  - Goa
  - Punjab
  - Rajasthan
  - Kerala
- Which of the following is a matching set ?
  - LSD – Psychedelic trips
  - Alcohol – Mental alertness
  - Nicotine – Impairment of judgement
  - Pethidine – Stimulant
- In which of these proteins are absent
  - Pancreatic juice
  - Saliva
  - Bile
  - Intestinal juice
- Chitin is a structural polysaccharide and is polymerized from
  - Glucose
  - Ribose
  - Deoxyribose
  - None of the above
- Enzymes differing in molecular weight, amino acid composition and in their sequence but having the same substrate specificity are known as
  - Isozymes
  - Zymogens
  - Coenzymes
  - Lysozyme
- The process of oxidative phosphorylation takes place in

- (1) Mitochondria (2) Chloroplasts  
 (3) Ribosomes (4) Cytoplasm
15. In List I is given function associated with a particular leucocyte and in List II is given the name of leucocytes. Using the given codes select the correct answer.

List I (Function)	List II (Name of leucocyte)
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- |                                             |                |
|---------------------------------------------|----------------|
| A. Prevention of blood clotting in arteries | 1. Neutrophils |
| B. Antibody production                      | 2. Monocytes   |
| C. Phagocytosis                             | 3. Eosinophils |
| D. Role in allergy                          | 4. Lymphocytes |
|                                             | 5. Basophils   |

Codes are :

- (1) A-1, B-4, C-3, D-2  
 (2) A-2, B-3, C-4, D-1  
 (3) A-5, B-3, C-4, D-2  
 (4) A-5, B-4, C-1, D-3
16. ST segment is elevated  
 (1) During myocardial infraction  
 (2) Ventricular depolarization  
 (3) Rheumatic heart disease  
 (4) Failure of conducting system
17. Who received Nobel Prize for work on chemical transmission of nerve impulse ?  
 (1) Banting and Best  
 (2) Sir Henry Hallett Dale and Otto Loewi  
 (3) Norman Borlough  
 (4) Roger Sperry, David Hobel and T. Weisel
18. Excretion of nitrogenous waste product in semisolid form occurs in  
 (1) Urotelic animals  
 (2) Ammonotelic animals  
 (3) Uricotelic animals  
 (4) Desert animals
19. The function of cerumenous glands found in auditory canal is  
 (1) Help in hearing  
 (2) Conduction of sound waves  
 (3) Wax secreted by cerumenous glands act as flytrap for dust, pollutants, pathogens, insects etc.  
 (4) All of these
20. Which part of retina consists of only cones ?  
 (1) Fovea centralis (2) Ora serrata  
 (3) Blind spot (4) Tridal retina
21. Vasopressin controls reabsorption of water from distal convoluted tubules and collecting tubules of nephrons. It results in  
 (1) Dilution of ECF  
 (2) Increased permeability of wall of DCT and CT  
 (3) Concentration of urine  
 (4) All of these

22. Insulin receptor is a  
 (1) Heterotetrameric protein  
 (2) Heterotetrameric protein consisting of 2 $\alpha$  subunits and two b subunits  
 (3) Heterotetrameric protein consisting of 1 $\alpha$  subunit, 1 $\beta$  subunit, 1 $\phi$  subunit and 1 $\delta$  subunits  
 (4) Simple polypeptide

23. Given are the two lists. List I contains name of body part and List II contains function / position attributed to it. Match List I with List II using the given codes.

- |                       |                       |
|-----------------------|-----------------------|
| List I                | List II               |
| A. Tunica             | 1. Spermatic cord     |
| B. Discus proligerous | 2. Passage of sperms  |
| C. Vas deferens       | 3. Covering of testes |
| D. Bartholin glands   | 4. Lubrication        |
|                       | 5. Graffian follicle  |

Codes are :

- (1) A-3, B-5, C-2, D-1  
 (2) A-3, B-5, C-1, D-4  
 (3) A-1, B-4, C-2, D-5  
 (4) A-5, B-3, C-1, D-4
24. Entry of sperm restarts cell cycle by  
 (1) Breaking M phase promoting factor (MPF) and turning on the anaphase promoting complex (APC)  
 (2) Activating female pronucleus  
 (3) Activating cytoplasm of egg  
 (4) Secretion of fertilizin
25. The morphogenetic movements change the hollow spherical blastula into a  
 (1) Embryonic disc (2) Gastrula  
 (3) Morula (4) Neurula
26. In which of the following disease due to low bone mass bones become susceptible for fracture  
 (1) Osteomalacia  
 (2) Osteoporosis  
 (3) Parathyroid tetany  
 (4) Rheumatoid arthritis
27. Which of the following is a limbless Amphibian?  
 (1) Salamander (2) Eels  
 (3) Snakes (4) *Ichthyophis*
28. The first digit or thumb of rat is also called  
 (1) Poles (2) Autopodium  
 (3) Both (1) and (2) (4) None of these
29. Which of the following is correct for *Pheretima* ?  
 (1) Lateral heart (2) Curled posterior end  
 (3) Lateral veins (4) Flame cells
30. Mouth parts of mosquito are modified for  
 (1) Sucking  
 (2) Siphoning  
 (3) piercing and sucking  
 (4) Cutting
31. Excretory organs of cockroach are  
 (1) Green gland  
 (2) Nephridia  
 (3) Malpighian tubule  
 (4) Flame cell

32. Cockroaches spread diseases by
- (1) Acting as secondary host of many parasites
  - (2) Acting as primary host of many disease causing germs
  - (3) Carrying germs from gutters, sewages etc. to food
  - (4) All of these
33. Match the conditions given in List I with the name of the group in which the particular condition is found given in List II
- | List I (coelom)         | List II (group) |
|-------------------------|-----------------|
| 1. Schizocoelous coelom | A. Hydrozoa     |
| 2. Haemocoel            | B. Nematoda     |
| 3. Pseudocoel           | C. Insecta      |
| 4. Acoelomate condition | D. Oligochaeta  |
- (1) 1-B, 2-C, 3-A, 4-D
  - (2) 1-D, 2-C, 3-B, 4-A
  - (3) 1-A, 2-D, 3-C, 4-B
  - (4) 1-B, 2-C, 3-A, 4-D
34. Food vacuole of *Amoeba* is comparable to
- (1) Stomach
  - (2) Contractile vacuole
  - (3) Gastro vascular cavity of Hydra
  - (4) None of these
35. *Sycon* belongs to a group of animals, which are best described as
- (1) Unicellular or acellular
  - (2) Multicellular without any tissue organization
  - (3) Multicellular with a gastrovascular system
  - (4) Multicellular having tissue organization but no body cavity
36. Main character of phylum Coelenterata is
- (1) Polymorphism
  - (2) Presence of cnidoblasts
  - (3) Dimorphism
  - (4) Aquatic nature
37. In *Ascaris* how many juveniles are formed from fertilized egg upto adult
- (1) 1
  - (2) 2
  - (3) 3
  - (4) 4
38. During embryonic development the information encoded in the genes is decoded in an orderly fashion. The end result is the synthesis of specific proteins in orderly fashion. This is due to
- (1) A common method of protein synthesis in all organisms
  - (2) Different methods of protein synthesis in different organism
  - (3) Evolution in different directions
  - (4) Any of these
39. The concept that evolution of animals took place through natural selection was propounded by
- (1) Darwin
  - (2) Mendel
  - (3) Lamarck
  - (4) Huxley
40. Comparative structure of heart of all vertebras indicate towards
- (1) Differences in the structure of heart in different groups
  - (2) Basic structural plan of hearts of all vertebrates
  - (3) Nothing significant
  - (4) Analogy
41. Neurons release some protein that is required for mitosis
- (1) Transferin
  - (2) Activation factor
  - (3) Stimulating factor
  - (4) Topoisomerase
42. Metastasis is associated with
- (1) Both malignant and benign tumours
  - (2) Crown gall tumour
  - (3) Malignant tumours
  - (4) Benign tumours
43. A peptide bond formation between two amino acids is accompanied by the
- (1) Addition of H<sub>2</sub>O
  - (2) Deamination
  - (3) Decarboxylation
  - (4) Loss of H<sub>2</sub>O
44. Which of the following vitamins is essential for the utilization of carbohydrates ?
- (1) Tocopherol
  - (2) Thiamin
  - (3) Riboflavin
  - (4) Ascorbic acid
45. Ribozymes are
- (1) Groups of enzymes located in ribosomes
  - (2) RNA molecules having enzymatic activity
  - (3) Enzymes for clearing ribosomal subunits
  - (4) RNA particles dissociating enzymes
46. Stimulation of sympathetic nerve of heart accelerates the heart beat as a result of
- (1) Release of acetylcholine
  - (2) Inhibition of acetylcholinestrase
  - (3) Release of nor adrenaline
  - (4) Inhibition of dopamine
47. Carbonic anhydrase is found in high concentration in
- (1) Plasma
  - (2) Erythrocytes
  - (3) Leucocytes
  - (4) Lymph
48. Brunner's glands are found in
- (1) Pancreas
  - (2) Stomach
  - (3) Mucosa of colon
  - (4) Submucosa of duodenum
49. Multiple ovulation and embryo transfer is a method of
- (1) Fish cultivation
  - (2) Birth control method
  - (3) Cloning of monkey
  - (4) Hybridization in cattle
50. Carcinoma refers to
- (1) Malignant tumours of the connective tissue
  - (2) Malignant tumours of the skin or mucous membrane
  - (3) Malignant tumours of the colon
  - (4) Benign tumours of the connective tissue



# ANSWERS FOR ZOOLOGY SPECIAL PAPER – 12

- |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.  | (4) | 2.  | (1) | 3.  | (2) | 4.  | (4) | 5.  | (4) |
| 6.  | (1) | 7.  | (4) | 8.  | (1) | 9.  | (4) | 10. | (1) |
| 11. | (3) | 12. | (4) | 13. | (1) | 14. | (1) | 15. | (4) |
| 16. | (1) | 17. | (2) | 18. | (3) | 19. | (3) | 20. | (1) |
| 21. | (4) | 22. | (2) | 23. | (2) | 24. | (1) | 25. | (2) |
| 26. | (2) | 27. | (4) | 28. | (1) | 29. | (1) | 30. | (3) |
| 31. | (3) | 32. | (3) | 33. | (2) | 34. | (4) | 35. | (2) |
| 36. | (2) | 37. | (4) | 38. | (1) | 39. | (1) | 40. | (2) |
| 41. | (1) | 42. | (3) | 43. | (4) | 44. | (2) | 45. | (2) |
| 46. | (3) | 47. | (2) | 48. | (4) | 49. | (4) | 50. | (2) |

