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**Part III — ZOOLOGY**

( English Version )

Time Allowed : 3 Hours ]

[ Maximum Marks : 150

**PART - I***Note :* i) All the questions are to be answered.

ii) Choose and write the correct answers in the answer-book.

30 × 1 = 30

1. Sickle-cell anaemia is due to

- a) autosomal mutant allele                      b) sex chromosomal mutant allele  
c) vitamin deficiency                              d) hormone imbalance.

2. In human karyotype the chromosomes in Group G are

- a) Telocentric                                      b) Acrocentric  
c) Metacentric                                      d) Sub-metacentric.

3. cDNA library contains only

- a) chromosomal fragments  
b) DNA fragments  
c) RNA molecule fragments  
d) DNA molecules for genes.

[ Turn over

4. Which is commonly considered as a "biologists' paradise" ?
- a) Gulf of Mannar Biosphere Reserve
  - b) Nanda Devi
  - c) Great Nicobar
  - d) Nilgiri Biosphere Reserve.
5. One of the beehive products used for apitherapy is
- a) Beeswax
  - b) Royal jelly
  - c) Bee venom
  - d) Pollen.
6. Which among the following fractures occurs in the young bones of children ?
- a) Stress fracture
  - b) Pathological fracture
  - c) Green stick fracture
  - d) Closed fracture.
7. Circulation of clotted blood in the circulatory system is called
- a) Embolus
  - b) Bolus
  - c) Blood coagulation
  - d) Thrombus.
8. The volume of cerebrospinal fluid in human is
- a) 150 ml
  - b) 170 ml
  - c) 200 ml
  - d) 220 ml.
9. In GIFT method, the fertilized ova are introduced into the
- a) Fallopian tube
  - b) Fallopian funnel
  - c) Uterus
  - d) Cervix.
10. In the stomach, HCl is secreted by
- a) Beta cells
  - b) Alpha cells
  - c) Oxyntic cells
  - d) Interstitial cells.



11. The duration of QRS complex in ECG is about
- 0.1 second
  - 0.08 second
  - 0.3 second
  - 0.4 second.
12. In silkworm muscardine disease is caused by
- virus
  - bacteria
  - fungi
  - protozoan.
13. Milk of which of the following cows is characterised by high carotene content?
- Haryana
  - Gir
  - Jersey
  - Sindhi.
14. Which of the following is rich with minerals, vitamins, trace elements and bio-active substances?
- Oysters
  - Sea weeds
  - Marine fishes
  - Lobsters.
15. Identify the zoological name for 'Koduva':
- Ostrea edulis*
  - Scylla serrata*
  - Lates calcarifer*
  - Penaeus indicus.*
16. Intake of less amount of protein leads to the deficiency disease called
- Beri-beri
  - Rickets
  - Anaemia
  - Marasmus.
17. Nyctalopia is due to the deficiency of
- Vitamin A
  - Vitamin D
  - Vitamin E
  - Vitamin K.

18. Which of the following methods disintegrates stones in the bladder by focusing shock waves on them ?
- a) Endoscopy                                      b) Cystoscopy  
c) Lithotripsy                                     d) Ureterorenoscopy.
19. The enzyme tyrosinase converts the amino acid called tyrosine into
- a) Melanin                                         b) Ergosterol  
c) Black pigment                                 d) White pigment.
20. The total number of rod cells present in the eye is
- a) 60 millions                                      b) 80 millions  
c) 120 millions                                    d) 160 millions.
21. According to Evolution more importance is given to
- a) organ of use and disuse  
b) theory of abiogenesis  
c) special creation  
d) origin of species.
22. When a disruptive selection produces more than one phenotype within a population, the phenomenon is known as
- a) selective pressure                             b) bottleneck effect  
c) polymorphism                                 d) founder principle.
23. The optimum temperature of the artificial brooder during the first 3 days is
- a) 30°C    b) 28°C  
c) 33°C    d) 32°C.



24. The fish which is having accessory respiratory organs is
- a) *Channa marulius*                      b) *Tilapia mosambica*  
c) *Labeo rohita*                              d) *Cirrhina mrigala*.
25. Guppy is an exotic variety of ornamental fish originating from
- a) Africa                                      b) Thailand  
c) Central America                      d) Japan.
26. The disease Syphilis is caused by the bacteria called
- a) *Salmonella typhi*                      b) *Yersinia pestis*  
c) *Vibrio cholerae*                          d) *Treponema pallidum*.
27. Innate immunity through 'Phagocytosis' is provided by
- a) Erythrocytes                              b) Thrombocytes  
c) Leucocytes                                 d) Immunogens.
28. Thymus is a
- a) peripheral lymphoid organ              b) tertiary lymphoid organ  
c) primary lymphoid organ                 d) secondary lymphoid organ.
29. Skin represents which type of barrier ?
- a) Anatomical barrier                      b) Physiological barrier  
c) Phagocytic barrier                        d) Inflammatory barrier.
30. A superior method for identification of urine sugar is
- a) Haemocytometer method              b) Thin layer chromatography method  
c) Manometer using method              d) Electronic test method.

## PART - II

Note : Answer any fifteen questions.

15 × 3 = 45

31. What are the functions of lipids ?
32. What are the causes of peptic ulcer ?
33. What are the symptoms of rickets in children ?
34. What is Plasmaphoresis ?
35. Write the limiting factors for heart transplantation.
36. What is Corpus albicans ?
37. What is presbiopia ? How is it rectified ?
38. What are the contributions of Robert Koch to Microbiology ?
39. How does Xenograft differ from Isograft ?
40. What is Protein Data Bank ?
41. Mention the uses of Karyotyping.
42. Define rain water harvesting.
43. What is Anthrax ? Write any two symptoms of it.
44. Write a short note on Chittagong.
45. State the viral diseases of honeybees.
46. What are the advantages of artificial insemination in cattle ?
47. What is Endoscopy ?



48. What is meant by gene pool ?
49. What is called 'Hapa' ? Mention its uses.
50. Why is the freshwater prawn, *Macrobrachium rosenbergii* most suitable for culturing ?

### PART - III

Note : Answer any seven questions including Question No. 56 which is compulsory.

7 × 5 = 35

51. Give an account of root canal therapy.
52. What are the functions of cerebrospinal fluid ?
53. Write short notes on pathogenicity and control measures of *Ascaris lumbricoides*.
54. Explain the different methods by which the gene transfer takes place in bacteria.
55. Write a note on graft rejection.
56. Write about the measures to prevent ozone layer depletion.
57. "Hydrogen is a main source of power for future." Comment.
58. Enumerate the clinical significance of Haemocytometer.
59. Explain the formation of silk.
60. Write short notes on the various types of pre-mating isolation.
61. Give an account of the factors to be considered for locating a fish pond.
62. Mention the environmental and public health concern related to aquaculture.

**PART - IV**

Note : Answer any four questions.

4 × 10 = 40

63. Describe the mechanism of breathing with diagram.
  64. Write an essay on the physiological effects of the hormones of pancreas.
  65. Describe the different types of hearing loss and the correcting measures adopted.
  66. Write a detailed account on cultivation of animal viruses.
  67. Give an account on human genome project.
  68. Explain the management of non-hazardous solid waste.
  69. Give an account on dairy breeds.
  70. Describe the bionomics of fresh water cultivable fishes and prawns.
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