



SAIVABHANUKSHATRIYA COLLEGE
(AruppukottaiNadargalUravinmuraiPothu Abi ViruthiTrustukuPathiyapattathu)

ARUPPUKOTTAI
DEPARTMENT OF ZOOLOGY
QUESTION BANK

Class :	B.Sc., Zoology		
Semester (UG - III & V; PG - III) :	III	Subject Code :	SZYJA31
Name of the Subject :	Microbiology, Cell biology, Genetics, Molecular biology and Biotechnology		

Section A (Multiple Choice Questions)

Unit I: (Microbiology)

- The nucleus of bacteria
(a) Well developed (b) Incipient (c) Absent (d) Found above all the surface
- Which of the following virus which infect bacteria is
(a) TMV (b) CaMV (c) Bacteriophage (d) Bacillus
- Which of the following is caused by a virus
(a) Jaundice (b) Cholera (c) Tuberculosis (d) Dysentery
- The cell wall of bacteria is made up of
(a) Cellulose (b) Glucose (c) Chitin (d) Peptidoglycan
- The genetic material of Tobacco mosaic virus is
(a) RNA (b) DNA (c) Protein coat (d) Capsid

Unit II: (Cell biology)

- Which of the following organelle release oxygen
(a) Golgi apparatus (b) Chloroplast (c) Ribosomes (d) Mitochondria
- Which type of ribosomes are found in the body of prokaryotes
(a) 70S & 80S (b) 80S (c) 78S (d) 70S
- ATP – the high energy compounds are produced here
(a) Cell Wall (b) Mitochondria (c) Chloroplast (d) Nucleus
- The Unit membrane concept was proposed by
(a) Danielli (b) Doricelli (c) Springster (d) Robertson
- Mitochondria was discovered by
(a) Benda (b) Kolliker (c) Palada (d) Kreb

Unit III: (Genetics)

- An exceptional to Mendals law is
(a) Independent Assortment (b) Linkage (c) Dominance (d) Purity of gametes
- Alleles are
(a) Alternate form of genes (b) Linked genes (c) Chromosomes (d) Homologous chromosomes
- Color blindness is found more in males than in females because
(a) The males containing the single affected X chromosome are color blind (b) Heterozygous females are color blind (c) Males having affected Y chromosome are color blind (d) Affected X chromosome has much high affinity to Y chromosome
- The ratio 9:3:3:1 is obtained through ----- cross
(a) Monohybrid (b) Dihybrid (c) Complementary (d) Epistasis
- Crossing – over takes place in the
(a) Diakinesis stage (b) Anaphase stage (c) Pachytene stage (d) Leptotene stage

Unit IV: (Molecular biology)

- DNA replication requires
(a) Unwinding (b) Complementary base pairing (c) Joining (d) All of the above
- Transcription is most similar to
(a) DNA replication (b) Chemiosmosis (c) Translation (d) Facilitated transport
- Polypeptide is assembled on a



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- (a) Ribosome (b) DNA molecule (c) Nuclear Pore (d) Nuclear

19. The only RNA molecule synthesized in the nucleolus is
(a) m RNA (b) t RNA (c) r RNA (d) h RNA
20. Which of the following is a termination codon
(a) UCU (b) UCA (c) UCC (d) UAG

Unit V: (Biotechnology)

21. The expression of a transgene in the target tissue is identified by
(a) Transgenes (b) Promoter (c) Enhancer (d) Reporter
22. Introduction of foreign gene by micropipette is
(a) Embryonic stem cell method (b) Retroviral method (c) Microinjection (d) Gene gun
23. Animal Pharming, production of pharmaceutical proteins are produced through
(a) Fishes (b) Mice (c) Cattles (d) Rats
24. Enzymes used to cut DNA fragments
(a) Restriction enzyme (b) Polymerase (c) Ligase (d) Helicase
25. Vectors used for
(a) Cut DNA (b) Join DNA (c) Transferring DNA (d) Lyse DNA

Section B (7 mark Questions)

Unit I: (Microbiology)

26. With suitable diagram explain the structure of T4 bacteriophage.
27. Explain the various morphological forms of bacteria.
28. Give a short account on coccus type of bacteria.
29. Draw a diagram of a prokaryotic cell and label the parts.
30. Write a brief note on bacillus type of bacteria.

Unit II: (Cell biology)

31. Briefly explain the structure and function of endoplasmic reticulum.
32. Summarize the structure and functions of cell membrane.
33. Describe the types and functions of ribosomes.
34. What are golgi bodies? Explain their functions.
35. Explain the inner details of mitochondria with neat sketch.

Unit III: (Genetics)

36. State the law of segregation of Mendel and explain it with an example.
37. Enumerate and explain the types of linkage.
38. Give an account on blood grouping in man.
39. Bring out the genetics and importance of polygenic inheritance with an example.
40. Explain monohybrid cross with suitable diagram.

Unit IV: (Molecular biology)

41. Explain the structure and functions of mRNA.
42. Briefly write the process of DNA replication.
43. Describe the double helical structure of DNA molecule.
44. Comment on clover leaf structure of tRNA molecule.
45. Discuss the major steps in transcription.

Unit V: (Biotechnology)

46. Give a short account on applications of transgenic animals



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47. Explain the procedure to construct recombinant DNA
48. Describe the stem culture technique and its applications
49. What is DNA fingerprinting? Explain how it is useful in forensic sciences.
50. Give an account of the basic requirements needed for the construction of rDNA.

Section C (10 mark Questions)

Unit I: (Microbiology)

51. Describe symptoms, pathogenesis, prevention and control of Gonorrhoea.
52. Give an account on pathogenicity, prevention and treatment of viral disease.

Unit II: (Cell biology)

53. Write an essay on structure and functions of mitochondria.
54. Elaborate the different models proposed to explain the structure of plasma membrane.

Unit III: (Genetics)

55. Discuss about linkage and crossing over.
56. With suitable example explain the sex-linked inheritance.

Unit IV: (Molecular biology)

57. Explain about central dogma of protein synthesis.
58. Give a detail note on the types of RNA with neat sketch.

Unit V: (Biotechnology)

59. What are the steps involved in DNA finger printing.
60. What are transgenic animals? How are they produced?