

2020
University of Calcutta
M.Sc. Second Semester Examination
Zoology
ZCT 211
(Biochemistry and Genetic Engineering)
Answer any two of the following questions

1. (a) Illustrate the structure of a triacylglycerol. State the feature of an ester bond.
(b) Distinguish between – (i) saturated and unsaturated fatty acids (ii) short chain and long chain fatty acids.
(c) Elucidate the structure and functions of LDL and VLDL.
3+4+3 = 10
2. (a) Comment on the use of EST in human genome scanning.
(b) What is STS? Explain briefly how STS helps in gene regulation.
(c) Comment on the application of 2D Gel electrophoresis and MALDI with special reference to proteomics study.
(d) What is FASTA?
2+3+4+1= 10
3. (a) What is the difference between Genomic library and cDNA library?
(b) Describe with suitable illustration, how would you proceed to develop a transgenic mouse model where you can knock-out gene “ X” from the mouse genome.
(c) Comment on gene silencing by siRNA technology with suitable illustration.
2+5+3= 10
4. (a) Briefly describe the genetic markers used in DNA fingerprinting.
(b) Summarize the different methods used in obtaining the DNA profile of an individual with a suitable illustration.
(c) Delineate the limitation of DNA fingerprinting in forensics.
(d)“DNA fingerprinting has a wider application in biology”. Substantiate the statement with proper examples.
2+4+2+2=10