

Five-Year integrated M.Sc. Examination 2021
Semester - I
Paper: LS-1-1-1
Molecules and their Interaction Relevant to Biology

Time: Three hours

Full marks: 60

Question no. 1 is compulsory. Answer **any two** questions from **questions 2 to 4** and any three questions from **questions 5 to 9**.

1. Answer **any ten** of the following:

10x2 = 20

- a) What are essential amino acids? Give example.
- b) Give two examples of sulphur containing amino acids.
- c) Write the chemical structure of sucrose.
- d) Write the chemical structure of lactose.
- e) Write the structure of cholesterol.
- f) Write the structure of uracil and thymine.
- g) Mention the name of one saturated and one unsaturated fatty acid.
- h) Write the structure of ribose and deoxyribose sugar.
- i) What is nucleoside and nucleotide?
- j) Write brief note on F_0F_1 particle.
- k) What is rotary model for ATP generation?
- l) Write brief note on Cytochrome oxidase.

2. Differentiate between motif and domain. 5
3. Write the differences between A-DNA and Z-DNA. 5
4. Classify different types of motif. 5
5. Describe fat soluble vitamins with their structure, function and deficiency diseases. 10
6. Write about Watson and Crick model of DNA structure. 10
7. Describe the Clover leaf structure of t-RNA. 10
8. Describe the energy investment phase and pay off phase of glycolysis. 10
9. Describe the different types of secondary (2°) structure of protein. 10