

B.Sc. ZOOLOGY FIFTH SEMESTER SESSIONAL EXAMINATION, 2023
COMPUTATION BIOLOGY AND BIOSTATISTICS
PAPER CODE: ZOO-HE-5016

Marks=30

Time=1 hour

1. Match the following:

4

Discipline	Focus area	Examples
Genomics	Investigation of gene expression patterns and RNA molecules	Transcription factors
Transcriptomics	Study of entire set of genes in an organism	DNA
Metabolomics	Investigation of gene expression patterns and RNA molecules	mRNA
Proteomics	Analysis of small molecules and metabolites in biological systems	Glucose

2. Write brief answer to the following (any three):

2x3=6

- What is gene sequencing? Give example of gene sequencing.
- What is Un-Prot? What kind of information will be present in Un-Prot database?
- What are primary database? Give two examples.
- What is meant by ADME in pharmacokinetics?
- What is standard deviation?

3. Answer **any four** of the following:

5x4=20

- In an international student organization the president of the organization expected that students present should be 10% Africans, 225% Indians, 40% Asians and 25% Americans. The students actually present consisted of 25 Africans, 15 Indians, 80 Asians and 20 Americans. Test the President's belief at 5% level (Given χ^2 at 0.05 for 3df is 7.815).
- Explain briefly about types of biological database with a flowchart.
- Discuss the difference between structure based Drug Designing (SBDD) Vs Ligand- based drug designing (LBDD).
- Explain the concept of sequence annotation genomics. What are types of sequence annotation?
- What are the major steps in the process of drug discovery?