

Master of Science (Instrumentation) Examination, 2019

(1<sup>st</sup> Year, 1<sup>st</sup> Semester)

Paper - V (T-104B)

Biology –I

Time : Two hours

Full Marks : 50

Answer any three of the following questions

Two marks have been allotted for general proficiency.

1. How do you justify that an amino acid can act as acid as well as base? What is zwitterionic state of an amino acid? How can the binding of two amino acids into a peptide formation be described? "Tertiary and quaternary structures are the reflection of the primary structure of protein." ---- Justify? "Loss of protein structure results in loss of function" – discuss.

[3+2+3+4+4]

2. How do you classify the enzymes on the basis of reaction type? Discuss different models for enzyme-substrate interaction. How enzyme activity is related to pH and temperature? What is competitive inhibition of enzyme action?

[4+ 6 +4+ 2]

3. Describe the process of secondary active transport. How simple diffusion differs from osmosis. What are the factors that control diffusion? What is exocytosis? What is pinocytosis?

[5+3+4+2+2]

4. Describe the mosquito stage of malaria parasite. Can cloroquine alone be used to treat relapsing malaria and why? What is cerebral malaria? Why the development of malaria vaccine is very difficult? Why classical malaria fever takes place every 48 hours or 72 hours? Describe innate resistance of malaria.

[4+3+2+ 2+2+3]

5. Write short notes on any four of the followings:

(a) Mitochondria (b) Nucleus (c) Golgi apparatus (d) Phagocytosis (e) Trophozoite

[4×4]