U.G. 1st Semester Examination - 2019

BOTANY

[HONOURS]

Course Code : BOT(H)CC-I-T

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions.

1. Answer any **five** of the following: 2×5=10

   a) What is zwitter ions form of amino acid?

   b) What are chaperones? Give an example.

   c) Give an example of a right-handed and a left-handed DNA.

   d) Why Hn RNA is called 'DNA like RNA'?

   e) Why ATP is called an energy currency molecule?

   f) What do you mean by the term 'facilitated diffusion'?

[Turn over]

g) Which particles of mitochondrion are responsible for electron transport chain? Give the full form of $NADH+H^+$.

h) What is MTOC? Give an example from plant cell.

2. Answer any **two** questions: $5\times2=10$

a) What do you mean by free energy? State the laws of thermodynamics. 2+3

b) Define lipid. Write about the major classes of storage and structural lipids. 1+2+2

c) Write with sketch diagram the fluid mosaic model of plasma membrane. 5

d) What is cytoskeleton? Briefly describe the structure of cytoskeleton components. 1+4

3. Answer any **two** questions: $10\times2=20$

a) What are proteins? Give an account of the different levels of protein structure. Draw the pictorial flow diagram of targeting and insertion of proteins in the endoplasmic reticulum. 1+6+3

b) What structural feature allows DNA to store genetic information? Write pointwise the structural features of A, B and Z type of DNA

with sketch diagram. Draw and label the clover leaf model of t RNA. 2+6+2

c) Write the main cellular structures of an eukaryotic cell with diagram. Mention the origin of eukaryotic cell according to endosymbiotic theory. 6+4

d) Define nucleus. Describe the nuclear envelope with special reference to nuclear pore complex with diagram. What is the importance of nucleolus? 1+7+2