SH-I/Botany-102C-2/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

BOTANY

Course ID : 11312 **Course Code : SHBOT-102C-2**

Course Title: Biomolecules & Cell Biology

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the right hand side margin indicate marks.

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

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

(a) Give an example of sugar epimer.

(b) Draw the structure of glucopyranose.

(c) Give example of a polar covalent compound.

(d) What is GERL system?

(e) How does DNA differ from RNA with respect to nitrogen base?

(f) How is active transport different from passive transport?

(g) Cite an example of a coenzyme.

(h) Which structure of cell is responsible for ribosome biogenesis?

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

(a) Name one storage lipid and one structural lipid. Draw the structure of triacyl glycerol. Why PUFA are beneficial than saturated fatty acid? 2+2+1=5

(b) Enumerate different types of bonds responsible for primary, secondary and tertiary structures of protein. What do you mean by protein denaturation? 3+2=5

(c) How prosthetic group differs from coenzyme? What is the active site of enzyme? Briefly explain different types of enzyme inhibitions. 2+1+2=5

(d) What are core histone proteins? Mention the specific function of H-1 histone protein. What do you mean by chromatin scaffold? 2+1+2=5

3. Answer *any one* of the following: 10×1=10

(a) What do you mean by protein targeting and protein folding? How protein is targeted to its destination organelle? 2+2+6=10

(b) Describe the ultrastructure of mitochondria in brief with suitable sketch. Why mitochondria is called semiautonomous organelle? Point out the role of check points for regulation of cell cycle. (3+2)+2+3=10

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