TDC (CBCS) Odd Semester Exam., 2019

BOTANY

(1st Semester)

Course No. : BOTHCC–102T

(Biomolecules and Cell Biology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *two* of the following questions : 2×2=4

(a) What do you mean by essential fatty acids? Give example.

(b) Differentiate between homopolysaccharide and heteropolysaccharide.

(c) What do you mean by covalent bond? Give example.

2. *(a)* With the help of suitable diagram, describe the double-helical structure of DNA. Differentiate between Z-DNA and B-DNA. 5+1=6

Or

(b) Classify carbohydrates with chemical structure and examples. 6

UNIT—II

3. Answer any *two* of the following questions : 2×2=4

(a) What is cofactor? Give example.

(b) Differentiate between endergonic and exergonic reactions.

(c) What do you mean by apoenzyme and holoenzyme?

4. *(a)* What do you mean by activation energy? Describe the mechanism of enzyme action with suitable models. 1+5=6

Or

(b) Write notes on the following : 3×2=6

(i) Redox reactions

(ii) Enzyme inhibition

UNIT—III

5. Answer any *two* of the following questions : 2×2=4

(a) Write the role of lipid in formation of cell membrane.

(b) Give an example of cellular organism which contains plasmid. What is the function of plasmid?

(c) What are the main cytoplasmic structures present in prokaryotic and eukaryotic cells?

6. *(a)* With a neat diagram, describe the structure of bacterial cell. 6

Or

(b) Differentiate between endocytosis and exocytosis. Describe the process of endocytosis. 2+4=6

UNIT—IV

7. Answer any *two* of the following questions : 2×2=4

(a) Write the main functions of ribosome.

(b) Why are lysosomes known as 'the cleaners' of the cell waste?

(c) What are the substances that constitutes the chromatin?

8. *(a)* With neat diagram, describe the structure of plastids. 6

Or

(b) Write notes on the following : 3×2=6

(i) Chromatin

(ii) Cytoskeleton

UNIT—V

9. Answer any *two* of the following questions : 2×2=4

(a) What is synapsis? In which stage of cell division it occurs?

(b) Spindle apparatus is formed during which stage of mitosis? What is the function of spindle fibre?

(c) At which stage of mitosis chromosome start separating? What is karyokinesis?

10. *(a)* *(i)* Write the differences between mitosis and meiosis.

(ii) Write the characteristic features of prophase–1 of meiosis. 3+3=6

Or

(b) With the help of suitable diagram, describe the mechanism of regulation of cell-cycle. 6

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