TDC (CBCS) Even Semester Exam., 2019

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTCHCC–202T

(Plant Physiology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer any *ten* questions from the following : 1×10=10

(a) What is meant by tissue?

(b) What is the distinguishing character of meristematic tissue?

(c) Name the various elements of phloem.

(d) What is water potential?

(e) What is exosmosis?

(f) What is the path of ascent of sap?

(g) What are essential trace elements?

(h) Name the element essential for the synthesis of chlorophyll.

(i) Name the chloroplast pigments found in higher plants.

(j) What are thylakoids?

(k) What is the first stable product in C_3 cycle?

(l) Which hormone causes elongation of stem?

(m) Name the fungus from which gibberellin was discovered.

(n) What is photo-periodism?

UNIT—I

2. *(a)* Describe the internal structure of dorsiventral leaf with the help of a diagram. 4

(b) What are the different permanent tissues found in plants? Describe them briefly. 4

Or

(c) What do you mean by secondary growth in thickness? How does stem grow in thickness? 2+2=4

(d) What is meristem? Where are meristems located in plants and what are their functions? 1+(1+2)=4

UNIT—II

3. *(a)* Describe how plants absorb water from soil. 4

(b) Write short notes on diffusion and imbibition. 2+2=4

Or

(c) Discuss the mechanism of opening and closing of stomata. 4

(d) What is the importance of water to plant life? Add a note on guttation. 2+2=4

UNIT—III

4. *(a)* What are macro- and micro-nutrients? What are the criteria for identification of essentiality of nutrients? 1+1+2=4

(b) Name two symptoms of deficiency of nutrients in plants. Add a note on the mechanism of uptake of nutrients in plants. (1+1)+2=4

Or

(c) Discuss the mechanism of food transport in plants. 4

(d) Name any two essential nutrients in plants and describe their roles. (1+1)+2=4

UNIT—IV

5. *(a)* Describe the process of fixation of nitrogen by *Rhizobium*. 4

(b) Write short notes on CAM plants and cyclic photophosphorylation. 1+3=4

Or

(c) Define photosynthesis. Describe the factors required for photosynthesis. 1+3=4

(d) Write a note on ammonium assimilation in plants. 4

UNIT—V

6. *(a)* What is auxin? State the roles of auxins in plant growth. Mention the agricultural uses of auxins. 1+1+2=4

(b) What are photoperiodism and vernalization? Describe their significance. (1+1)+2=4

Or

(c) Write short notes on gibberellin and cytokinins. 2+2=4

(d) What are the different phases of growth of an organism? Add a note on seed germination. 2+2=4

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