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6 SEM TDC BOT M 1

2014

(May)

BOTANY

(Major)

Course : 601

(Plant Physiology)

Full Marks : 48
Pass Marks : 19

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. Fill in the blanks : 1×5=5

(a) Plasmolysis occurs when a cell is placed in a —— solution.

(b) The hormone —— signals the closure of stomata during severe draught.

(c) The special chemical compound —— is found in the root nodules of legumes.

(d) The evolution of CO_2 in presence of light is known as ——.

(e) Exudation of liquids from edges of leaves is called ——.

2. Write on/Answer the following in short : $3 \times 3 = 9$

(a) Physiological effects of water deficit

(b) "Transpiration is a necessary evil." Justify the statement.

(c) Emerson effect in photosynthesis

3. What is photoperiodism? Write the differences between short-day and long-day plants. What role does phytochrome play in flower initiation? 2+6+4=12

Or

Write notes on the following : $3 \times 4 = 12$

(a) Phytohormones

(b) Physiology of seed dormancy

(c) Symbiotic nitrogen fixation

(d) Vernalization

4. Discuss the process of glycolysis mentioning specific enzymes. What is the net gain of ATP? 8+2=10

Or

Describe the active and passive absorptions of water by roots in higher plants. Comment briefly on their relative importance. 8+2=10

5. Write explanatory notes on any *three* of the following : $4 \times 3 = 12$

(a) Significance of CAM

(b) nif gene and nitrification

(c) Grand period of growth

(d) Dixon's theory of ascent of sap

(e) Role of calcium and potash in plant nutrition

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