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6 SEM TDC BOT M 1

2017

(May)

BOTANY

(Major)

Course : 601

(Plant Physiology)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Choose the correct answer/Fill in the blanks of the following : 1×5=5
- (i) Water will be absorbed by root hairs when the external medium is isotonic / hypotonic / hypertonic / viscous.
- (ii) Water potentials are represented by Greek letter Ψ / Ω / ψ / ϕ .

- (iii) The rate of photosynthesis is maximum in green light / blue light / red light / far-red light.
- (iv) The symbiotic fixation of atmospheric nitrogen in root nodules of pulse crop is brought about by ____.
- (v) ____ hormone is used for artificial ripening of banana.

(b) Write short notes on the following : $3 \times 3 = 9$

- (i) Wilting coefficient
- (ii) Hydroponics
- (iii) Symbiotic nitrogen fixation

2. What do you mean by photophosphorylation? Distinguish between cyclic and non-cyclic photophosphorylation of photosynthesis.

$3 + 8 = 11$

Or

Explain the evidence which proves that phloem is the channel of transport of organic substances in plants. Describe the 'Mass flow hypothesis' of translocation of solutes in plants. Give its demerits.

$2 + 7 + 2 = 11$

(3)

3. What is meant by RQ? Distinguish between aerobic and anaerobic respiration. Describe the sequences of chemical reaction involved in Kreb's cycle. 1+2+8=11

Or

Write explanatory notes on the following : 5½×2=11

- (a) Practical utility of vernalization
(b) Active osmotic water absorption
4. What are phytohormones? Describe the physiological role of gibberellins in plants. Mention their importances in agriculture. 2+7+3=12

Or

Write briefly on the following : 6×2=12

- (a) Seismonastic movements in plants
(b) Significance of transpiration

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