

**6 SEM TDC BOT M 1**

**2 0 1 9**

( 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) Fill in the blanks with appropriate word : 1×5=5
- (i) The \_\_\_\_\_ group of bacteria oxidises ammonia to nitrite.
- (ii) Proteins are building blocks of the protoplasm, which are made up of nitrogenous substances called \_\_\_\_\_.
- (iii) Extra input of oxygen and extra release of carbon dioxide by green plants in light is called \_\_\_\_\_.

(iv) Opening and closing of stomata depend upon the \_\_\_\_\_ of the guard cells.

(v) \_\_\_\_\_ is a constituent of the chlorophyll molecule without which photosynthesis would not occur.

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

(i) Field capacity or water holding capacity of soil

(ii) Transpiration as a necessary evil

(iii) Photolysis of water and evolution of  $O_2$

2. What is ascent of sap? Explain in detail the transpiration pull and cohesion of water theory of ascent of sap.  $3+8=11$

Or

What do you mean by photophosphorylation? Describe briefly the cyclic and non-cyclic photophosphorylation.  $3+8=11$

3. Describe the citric acid cycle in plants. Explain how ATP molecules are generated in aerobic respiration.  $8+3=11$

Or

What are phytohormones? Describe the physiological roles of gibberellins or auxins in higher plants.  $3+8=11$

( 3 )

4. Write explanatory notes on any *three* of the following : 4×3=12

- (a) Photoperiodism
- (b) Tropic movement
- (c) Symbiotic nitrogen fixation
- (d) Chemosynthesis
- (e) Fermentation

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