

2015

( 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. (a) Fill in the blanks : 1×5=5

(i) Nyctanastic movement is a combined effect of light and \_\_\_\_.

(ii) Germination in mangrove is \_\_\_\_ type.

(iii) Ripening of fruit is caused by a hormone, named \_\_\_\_.

(iv) — soils are said to be physiologically dry.

(v) The phenomenon of opposition of ions or salts to enter the cells due to the presence of other ions is called —.

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

(i) Significance of osmosis in plants

(ii) Water potential

(iii) Physiology of seed germination

2. Describe the process of photo-phosphorylation. Trace the path of carbon in  $C_4$  plants.  $6+5=11$

Or

What is transpiration? Write about the mechanism of opening and closing of stomata in transpiration. What is the significance of transpiration?  $2+6+3=11$

3. What do you mean by 'ascent of sap'? Give an account of different theories of ascent of sap.  $3+8=11$

( 3 )

Or

Write explanatory notes on the following :

$$5\frac{1}{2}+5\frac{1}{2}=11$$

- (a) Biological nitrogen fixation
- (b) Oxidative phosphorylation

4. What are auxins? Write about their physiological effects. Also mention their importances in agriculture and horticulture.

$$2+6+(2+2)=12$$

Or

Write briefly on the following :

$$6+6=12$$

- (a) Role of microelements in plant nutrition
- (b) Chemosynthesis

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