

UNIT – IV

8. (i) Describe role of phytochromes in flowering. 2
(ii) Explain vernalization. 2
(iii) Explain hormonal control of flowering. 3.5
9. Give one bioassay each of auxin and gibberellins along with their physiological effects. 7.5

Roll No.

91538

**B. Sc. 2nd Semester (Chemistry) (Hons.)
(New Scheme)**

Examination – May, 2016

Botany - II

OPTIONAL PLANT PHYSIOLOGY & METABOLISM

Time : Three Hours]

[Maximum Marks : 40

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : There are *nine* questions in all. Question No. 1 is *compulsory* consisting of 10 parts of 1.0 mark each. Out of remaining *eight* questions candidates are required to attempt *four* questions by selecting *one* question from each Unit. Draw neat and well-labeled diagrams wherever required.

1. (i) Differentiate between a poplast and symplast.

1 × 10 = 10

91538- (P-4)(Q-9)(16) (4)

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- (ii) What are the constituents of xylem ?
- (iii) Name the hormone responsible for closing of stomata.
- (iv) Differentiate between phosphorylation and photophosphorylation.
- (v) What is photorespiration ?
- (vi) Name one reducing and one non-reducing disaccharide.
- (vii) Name the pigment responsible for photoperiodism.
- (viii) Why photosynthetic inhibitors make good herbicides ?
- (ix) Which hormone bring about internode elongation ?
- (x) What is the significance of glyoxylate cycle ?

UNIT – I

2. (i) Describe absorption of water from soil and its upward movement in plants.
- (ii) Describe water potential and its relationship with osmotic potential.
- (iii) Describe how humidity, temperature and light affect transpiration. $3 \times 2.5 = 7.5$

91538- (P-4)(Q-9)(16) (2)

3. Write notes on :

- (i) Carrier mediated salt uptake. 1.5
- (ii) Different ways by which water is lost from plants. 3
- (iii) Munch hypothesis. 3

UNIT – II

4. Describe important differences in the way carbon dioxide is fixed in C3 and C4 plants. 7.5
5. Write notes on : $3 \times 2.5 = 7.5$
- (i) Electron transport in phosphorylation.
- (ii) Glycolysis.
- (iii) Accessory pigments

UNIT – III

6. (i) Differentiate between nitrification and denitrification. 2
- (ii) Explain the mechanism of biological nitrogen fixation. 5.5
7. Differentiate between : $3 \times 2.5 = 7.5$
- (i) Alpha and beta oxidation of lipids.
- (ii) Glucose in cellulose and glucose in starch.
- (iii) Synthesis and degradation of sucrose.

91 538- (P-4)(Q-9)(16) (3)

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