

Total Pages : 3

B.Sc./5th Sem (H)/BOTH/22(CBCS)

2022

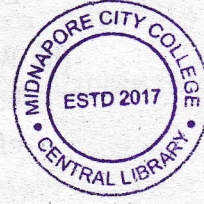
5th Semester Examination

BOTANY (Honours)

Paper : C 12-T

Plant Physiology

[CBCS]



Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

1. Answer any *five* of the following questions : $2 \times 5 = 10$
 - (a) What are aquaporins? Give an example.
 - (b) What will happen if two 1.0 Molal glucose solution of 0°C and 30°C are separated by a selective permeable membrane?
 - (c) How does symport and uniport differ with respect to membrane transport?
 - (d) What is Richmond-Lang effect?
 - (e) What are indole and non-indole auxins?
 - (f) Removal of apical meristem produce a bushy plant — Why?

P.T.O.

(2)

(g) What is the precursor molecule of GA and Ethylene?

(h) Why Xanthium (SDP) and Hyoscyamus (LDP) both produce flowers when provided with cycles of 14 hours light and 10 hours darkness?

Group - B

2. Answer any *four* of the following questions : 5×4=20

(a) What do you mean by p-protein? Elucidate the mechanism of phloem loading with the help of sucrose-H⁺ transporter.

(b) Mention the physiological roles of brassinosteroids as plant grow regulator.

(c) Briefly describe the mode of action of flowering hormone, florigen.

(d) What is micronutrient? State one role each of the following mineral elements in plant metabolism :

(i) Molybdenum,

(ii) Manganese,

(iii) Zinc,

(iv) Copper.

(e) Write a short note on GA induced seed germination.

(f) What do you mean by cavitation and embolism? Describe with suitable diagram, the role played by K⁺ in opening and closing of stomata.

(3)
Group - C

3. Answer any *one* of the following questions : 10×1=10

(a) What do you mean by vernalization? Explain the role of vernalization in :

(i) imparting competence to flower at apical meristem

(ii) influence epigenetic changes in gene expression.

With a suitable diagram explain the functioning of plasma membrane ATPase pump. 2+5+3

(b) Name a phytohormone which is chemically a purine derivative isoprenoid compound. Write down its skeletal structure and mode of action of that phytohormone in cell cycle, pathogenicity and nutrient mobilization. 1+1+8