3 (Sem–5/CBCS) BOT HC 2

2023

BOTANY

(Honours Core)

Paper : BOT–HC–5026

(Plant Physiology)

Full Marks : 60

Time : Three hours

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

1. Answer as directed : 1×7=7

   (a) The phenomenon where an ion species may depress the uptake of another ion species is called

   (i) ion inhibition

   (ii) ion suppression

   (iii) ion antagonism

   (iv) None of the above

(b) The stomata close in water stressed plants due to accumulation of ABA in

(i) mesophyll cells

(ii) subsidiary cells

(iii) guard cells

(iv) None of the above

(c) Richmond and Lang effect is

(i) apical dominance

(ii) foolish disease of rice

(iii) replacement of red light effect

(iv) retardation of leaf senescence

(d) Cryptochromes are a class of

(i) lipoproteins

(ii) flavoproteins

(iii) carbohydrates

(iv) amino acids

(e) When two types of molecules or ions move in opposite direction through plasma membrane, it is called

(i) uniport

(ii) symport

(iii) antiport

(iv) None of the above

(f) Which of the following mineral elements is less soluble and comparatively immobile in soil ?

(i) P

(ii) K

(iii) N

(iv) None of the above

(g) Which of the following categories of phytochrome mediated photoresponses in plants show reversible photoresponses ?

(i) LFRs

(ii) VLFRs

(iii) HIRs

(iv) All of the above

2. Write briefly on the following : 2×4=8

(a) Water potential

(b) Bolting

(c) Source–sink relationship

(d) Brassinosteroids

3. Write briefly on ***any three*** of the following : 5×3=15

(a) Antitranspirants

(b) Root Pressure theory

(c) Apical dominance

(d) Cytochrome Pump theory

(e) High Irradiation Responses

4. Answer the following questions : 10×3=30

(a) What is vernalization? Mention the sites of vernalization. How plants can be devernalized? Describe various theories of vernalization.

1+1+2+6=10

Or

Give a critical account of modern view of solute transport across membrane in plants. 10

(b) What is photomorphogenesis? Give an account of red light and far red light responses on photomorphogenesis.

2+8=10

Or

What is photoperiodism? What do you mean by LDP and SDP? Write a note on florigen concept. 1+2+2+5=10

(c) What are cytokinins? Describe the discoveries, occurance and transport (movement) of cytokinins.

2+2+2+4=10

Or

Describe the process of phloem loading and unloading. 10