

2016

Full Marks : 40

Time : 2 hours

*All Question carry equal marks.
Answer any **four** questions from any
one group as per your specialization.*

Group - A
(Plant Physiology)

1. (a) What is water potential ? Discuss different principles of absorption of water in plants.
(b) What is hydroponics ? What are the advantages of hydroponics versus soil grown plants ? Can plants be grown organically and hydroponically ?
2. (a) Discuss different theories regarding ascent of sap.
(b) Write note on passive and active absorption and their significance on plant life.
3. (a) What are phytochromes ? Discuss the role of phytochromes in short day and long day plants.
(b) Describe two extracellular receptors in plant and their importance.
4. (a) Describe the phototropic movement of plant towards light.
(b) Explain any two regulatory systems in plants.
5. (a) What is photorespiration ? How is it different from dark respiration ? Why photorespiration is considered a loss to C₃ plants ?
(b) Discuss the principles of light absorption in chloroplast.

(Turn over)

(2)

6. (a) Briefly describe the CAM pathway and how it differs from the C_4 pathway.
(b) Write note on mechanism of electron flow in photo system in plants.

Group - B
(Biology of Chordata)

1. (a) "The Chorda dorsalis." Explain the significant characters of Chordates.
(b) Present the general body plans of Cyclostomes.
2. (a) Discuss the general organization of Dipnoi.
(b) Comments on "Amphibian parental care".
3. (a) Differentiate Urochordates from Cephalochordates.
(b) Elaborate on significant characters of Reptiles.
4. (a) Give an account of origin of Tetrapoda.
(b) Write the affinities of Sphenodon.
5. (a) Describe the mechanism of perching in Birds.
(b) Dentition in Mammals. Explain with examples.
6. (a) Draw the ultrastructure of skin.
(b) Discuss the Jaw-suspensorium in Vertebrates.
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