

M.Sc.(Ag.) Semester – I Examination, 2014

Agronomy

Course : CPH – 501

(Stress Physiology)

Time: 3 Hours

Full Marks: 50

Questions are of value as indicated in the margin.

Answer **any five** questions.

1. Write short notes on **any four** of the following: 2.5×4=10
 - (a) Flooding injury
 - (b) Agricultural drought
 - (c) Antitranspirants
 - (d) Salt tolerant crops
 - (e) Hyper-accumulators of heavy metals
 - (f) Reactive oxygen species
2. What are the effects of high temperature stress on plants? Describe various tolerance mechanisms in plants to withstand heat stress. 4+6=10
3. What is transpiration? Describe the modern theory to explain the mechanism of stomatal movement? Why transpiration is a necessary evil? 2+6+2=10
4. Differentiate between **any four** of the following pairs: 2.5×4=10
 - (a) Abiotic stress and biotic stress
 - (b) Physiological drought and physical drought
 - (c) Compatible solutes and cryoprotectants
 - (d) Halophytes and Glycophytes
 - (e) Effect of drought on photosynthesis and respiration
 - (f) Transpiration and evaporation
5. What is drought? Classify droughts according to Van Bavel. Discuss in brief about different physiological effects of moisture stress on plants? 1+3+6=10
6. What is low temperature stress? Write different effects of low temperature on plants? Describe about different adaptation mechanisms in plants to overcome cold injury. 2+4+4=10
7. What do you understand by heavy metal stress? Describe about different mechanisms of heavy metal tolerance in plants. 3+7=10
8. (a) Discuss in brief about oxidative stress in plants?
(b) What is phytoremediation? Describe in brief about phytoremediation of heavy metals. 4+6=10