

M.Sc. (Ag.) Semester -III Examination 2014

Agronomy (Back)

Course : AGR 506

(Crop Growth Analysis and Productivity Modelling)

Time : Three Hours

Full Marks : 50

Questions are of value as indicated in the margin.

Answer **any five** questions.

1. Differentiate between growth and development. What are the growth strategies to be adopted for maximization of crop productivity? Explain in brief the influence of LAI on crop productivity.
2+4+4=10
 2. Differentiate between **any four** of the following :
2.5×4=10
 - (a) RLGR and PGR
 - (b) CO₂ compensation point and CO₂ saturation point
 - (c) Photorespiration and dark respiration
 - (d) CGR and RGR
 - (e) C₃ and C₄ plant
 - (f) Critical LAI and Ceiling LAI
 3. Answer **any four** of the following questions :
2.5×4=10
 - (a) What is Harvest Index?
 - (b) What is canopy architecture?
 - (c) Why C₄ plants are more efficient than C₃ plants?
 - (d) Write in brief about different photosynthetic pigments present in plants.
 - (e) How is leaf area of a plant measured?
 - (f) What is dark reaction of photosynthesis?
 4. What is plant ideotype? Write in brief about the characteristics of the ideotype of rice. 2+8=10
 5. What do you understand by Source-Sink relationship? Briefly describe about partitioning of assimilates during vegetative and reproductive phases of the plant?
4+6=10
 6. What is crop modelling? Discuss about different empirical models used for yield prediction.
2+8=10
 7. Discuss in brief physiological basis of yield variation in rice and potato.
5+5=10
 8. What is crop growth analysis? Discuss in brief about different physiological indices of crop growth used in crop growth analysis.
2+8=10
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