

M.Sc. (Ag.) Semester-II Examination 2017
Agronomy
Course : AGR 504
(Principles and Practices of Water Management)

Time : 3 Hours

Full Marks : 50

Questions are of value as indicated in the margin

Answer **any five** questions

1. What do you mean by scheduling of irrigation? Why the correct scheduling of irrigation is essential? Write down the adaptability, merits and demerits of drip irrigation. 2+2+(2+2+2)=10
 2. What do you mean by saturated soil? Discuss the movement of water in a saturated soil. State the role of water table for deciding cropping programme. 2+5+3=10
 3. Define water use efficiency (WUE). Discuss the factors influencing the WUE of crop. State irrigation management practices in wheat and SRI rice. 2+4+(2.5+1.5)=10
 4. (a) Define fertigation. Enumerate the role of fertigation in crop production.
(b) Discuss the pathway of water movement in SPAC.
(c) Write down the role of drainage in crop production. 4+3+3=10
 5. Define 'sodium adsorption ratio' and RSC. Classify irrigation water based on salinity and sodium hazard. Briefly discuss the management strategies for raising good crop by poor quality (saline) water. (1+1)+(2+2)+4=10
 6. What do you mean by excess water? Write down the factors responsible for development of excess water. What are the harmful effects of excess water on plant? 2+4+4=10
 7. (a) What do you mean by soil water potential? Discuss different components of soil water potential in relation to free energy concept.
(b) What is rainwater harvesting? Write down the various techniques of *in-situ* water harvesting and moisture conservation. 2+3+1+4=10
 8. Write short notes on the following (any five): 2×5=10
 - i) Water savers
 - ii) Water spenders
 - iii) Gross irrigation requirement
 - iv) Blaney-Criddle formula
 - v) unavailable water
 - vi) Drainage coefficient
 - vii) Lysimeter experiment
 - viii) Polyhouse
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