

M.Sc. (Ag.) Examination, 2018
Semester-II
Agronomy
Course- AGR-504
(Principles and Practices of Water Management)

Time: Three Hours

Full Mark: 50

Questions are of value as indicated in the margin

Answer **any five** questions

1. Define water requirement of crops. How does it differ from irrigation requirement? What are the principal methods of ET estimation? State Blaney-Criddle formula and write down the drawbacks of the formula. 1+2+2+2+3=10
 2. What do you mean by fertigation? Write down the need of fertigation in crop production. Write down the advantages of fertigation. Briefly discuss about the characteristics of fertilizers which are suitable for fertigation. Write down the name of fertilizers suitable for fertigation. 1+2+3+3+1=10
 3. What is over head irrigation? Why does the application efficiency of this method is much higher than a surface method of irrigation? Write the different components of over head irrigation. Enumerate the adaptability, merit and demerits of over head irrigation. 1+1+2+6=10
 4. What do you mean by excess water? What are the harmful effects of excess water on soil? Write in brief about crop production techniques in waterlogged soils. Discuss about the benefits of drainage. 1+4+3+2=10
 5. What do you mean by quality or irrigation water? Write down the quality parameters of irrigation water. Classify irrigation water based on sodicity hazards, RSC and boron concentration. Discuss about the strategies for growing of crops with saline water. 1+2+3+4=10
 6. What do you mean by irrigation scheduling? State the irrigation scheduling based on soil as indicator. Write in brief about water management of potato and sugarcane based on critical stage, irrigation frequency and method of irrigation. 1+3+6=10
 7. Enumerate the role of water in plant system. State water absorption processes in plant system. Write down the energy concept of soil water absorption in plant. 2+4+4=10
 8. Short notes on (**any five**): 2×5=10
 - (a) Drought escaping mechanism
 - (b) Water movement from saturated to unsaturated soil condition
 - (c) Furrow method or irrigation
 - (d) Advantages of management of water in controlled environments and poly houses
 - (e) Crop adaptation under water deficit condition
 - (f) Water use efficiency
 - (g) Crop co-efficient
 - (h) Rice drum culture
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