M.Sc. (Ag.) Examination, 2015
Semester – II
Agronomy : Principles and Practices of Water Management
Course : AGR-504

Time: 3 Hours **Full Marks: 50**

Questions are of value as indicated in the margin.

Answer ***any five*** questions.

1. (a) Define water requirement of crops. How does it differ from irrigation requirement? Discuss the environmental factors influencing the evapotranspiration of crop.

   (b) How is potential evapotranspiration by crop estimated from Thronthwaite formula? Mention its limitations. (1+1+3)+(3+2)=10

2. (a) What are the harmful effect of excess water on plant? Write in detail about the factors to be considered before and while constructing a drainage design.

   (b) Define drainage co-efficient. Write down the characteristics of good drainage system. (4+2)+(1+3)=10

3. What do you mean by quality of irrigation water? Mention the nature of salts responsible for poor quality water. Write down the water quality ratings. What should be your irrigation and fertilizer management practices for raising good crops with saline irrigation water? 1+2+4+3=10

4. (a) Write down in brief about the adaptation of crops to water deficit condition.

   (b) Discuss the factors responsible for water absorption. 5+5=10

5. What is trickle irrigation? How does it differ from drip irrigation? Write down the benefits of drip irrigation. What are the adoptability conditions of drip irrigation? 2+1+4+3=10

6. (a) How does the rootzone depth play a vital role in irrigation scheduling? Write in brief about irrigation water management of wheat.

   (b) How does the water stress affect the growth and yield of crops? (1+4)+5=10

7. Distinguish between (***any five***): 2×5=10

   (a) Saturation and maximum water holding capacity

   (b) Surface drainage and sub-surface drainage

   (c) Tile drains and mole drains

   (d) Active and passive absorption

   (e) Gross and net irrigation requirement

   (f) Furrow and alternate furrow method of irrigation

P.T.O.

8. Write short notes on (***any five***): 2×5=10

(a) Benefits of drainage

(b) Potential evapotranspiration

(c) Effective rainfall

(d) Advantages of water management in controlling environment in poly house

(e) Rain water harvesting

(f) Points to be considered for adopting fertigation

(g) Crop-coefficient

(h) Synergistic effect of fertilizer and irrigation on crop yield

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