

PART - I

Answer All the questions

Fill up the blanks:

(20 x 0.5 = 10)

1. Water is mainly needed to meet the demands of evaporation, transpiration and metabolic needs of plants, all together known as -----
2. ----- are medium textured soils having equal amounts of clay, silt and sand particles
3. ----- is the process of entry of water into the soil
4. ----- is a part of the rainfall that stored in the root zone and available for the consumptive use of the crop
5. The most critical stage for irrigation to wheat crop is -----

Give the name of :

6. Application of water to the soil for the purpose of supplying the moisture essential for the plant growth
7. The path of water from the soil (root zone) through the plant to the atmosphere forms a continuous system
8. Portion of soil volume occupied by air and water
9. A volume necessary to cover an area of one hectare to a depth of one cm
10. It is an open channel type measuring device

True or false:

11. Soil structure is the relative proportion of primary particles in the soil
12. Sandy soil absorb water slowly, but store more water
13. Tensiometer readings indicate only soil moisture tension
14. Water deficit occur in the plant, when transpiration exceeds the rate of the absorption
15. Cut throat flume has throat section

Choose the correct answer:

16. The author of the book Irrigation - Theory and Practice
(A.M. Michael, T. Yellamanda Reddy, D. Lenka, S.S. Prihar)
17. Readily available water to the plant is the moisture range between field capacity and -----
(Critical Moisture tension, Permanent wilting point, Ultimate wilting point, Hygroscopic coefficient)
18. $ET_o = C [p (0.46t + 8.13)]$ mm/day
(Thornthwaite method, Blaney - Criddle method, Penman method, Christiansen method)
19. Discharge of liquid waste from industry in which animal skin converted into leather
(Sewage water, Distillery effluent, Tannery effluent, Dye factory effluent)
20. It is the ratio between volume of water delivered to the field and volume of water diverted from the river
(Water use efficiency, Water storage efficiency, Water application efficiency, Water conveyance efficiency)

PART - II

Answer All the questions:

(6 x 1 = 6)

Define:

1. Soil Moisture Tension
2. Water Intake
3. Potential Evapotranspiration

Give Reasons:

4. In Rice field, care should be taken not to allow development of cracks
5. Generally phosphatic fertilizer is not recommended for fertigation (drip irrigation)
6. Severe water stress results in drastic reduction in photosynthesis

PART – III**Answer any SIX questions****(6 x 2 = 12)****Distinguish between:**

1. Gravitational water and Hygroscopic water
2. Active absorption and Passive absorption
3. Consumptive use and Conjunctive use
4. Saturated flow and Unsaturated flow
5. Cumec. and Cusec.
6. Alternate furrow irrigation and Skip furrow irrigation
7. Over irrigation and Over head irrigation
8. Gross Command Area and Culturable Command Area

PART – IV**Answer any FOUR questions:****(4 x 3 = 12)****Briefly discuss:**

1. Role of Water on plant growth
2. Subsurface irrigation
3. Measurement of irrigation water using orifice
4. Soil moisture estimation by Tensiometer
5. Irrigation under limited water supply
6. Leaching requirement

PART – V**Answer any FOUR questions:****(4 x 5 = 20)**

1. Explain about soil moisture constants and its importance
2. Enumerate different approaches for scheduling of irrigation and explain any two in details
3. What is Micro irrigation? Discuss in detail about drip irrigation
4. Explain various factors that influence water use efficiency
5. Define drainage and discuss methods of drainage