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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – M.Sc.(AG)-Agronomy-2025

Course Name – Principles and Practices of Water Management

Course Code - AGRON504(T)

(Semester II)

Full Marks : 40

Time : 2:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. Choose the correct alternative from the following :

- (i) Which instrument is used for measuring soil moisture?
 - a) Soil auger
 - b) Penetrometer
 - c) Tensiometer
 - d) pH meter
- (ii) Define irrigation in agriculture.
 - a) Removal of excess water
 - b) Artificial application of water to crops
 - c) Natural rainfall
 - d) Soil drainage
- (iii) Name the category of water directly used by plants.
 - a) Blue water
 - b) Green water
 - c) Grey water
 - d) Black water
- (iv) Identify the irrigation project with CCA more than 10,000 ha.
 - a) Minor irrigation
 - b) Medium irrigation
 - c) Major irrigation
 - d) Lift irrigation
- (v) Identify the soil water present at saturation.
 - a) Capillary water
 - b) Hygroscopic water
 - c) Gravitational water
 - d) Bound water
- (vi) Name the lower limit of available soil moisture.
 - a) Field capacity
 - b) Saturation
 - c) Permanent wilting point
 - d) Capillary point
- (vii) Recall the scientist who introduced the pF concept.
 - a) Mitscherlich
 - b) Schofield
 - c) Darcy
 - d) Penman
- (viii) Recall the unit of infiltration rate.
 - a) mm/day
 - b) cm/hr
 - c) ppm
 - d) bar
- (ix) Recall Darcy's law explains which parameter.

- a) Infiltration
- b) Hydraulic conductivity
- c) Evaporation
- d) Diffusion
- (x) Describe the basis of irrigation requirement calculation.
- a) WR – rainfall only
- b) WR – soil moisture only
- c) WR – (effective rainfall + soil contribution)
- d) WR – percolation

Group-B

(Short Answer Type Questions)

2.5 x
6=15

- 2. Define irrigation and state its objectives. (2.5)
- 3. Name the different forms of soil water. (2.5)
- 4. Define evapotranspiration. (2.5)
- 5. Evaluate the term Field Capacity. (2.5)
- 6. Select irrigation water based on SAR values. (2.5)
- 7. Explain briefly pumping unit of the sprinkler irrigation system. (2.5)

OR

Discuss about the emitters of a drip system. (2.5)

Group-C

(Long Answer Type Questions)

5 x 3=15

- 8. Analyze the classification of saline waters based on EC. (5)
- 9. Examine the components of a portable sprinkler irrigation system. (5)
- 10. Explain the distribution network of a drip irrigation system. (5)

OR

Discuss about the physical classification of water. (5)

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