A   **Reg. No. :** ☐☐☐☐☐☐☐☐☐☐☐☐

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The lacey' s theory applicable to   CO1-U

    (a)Non erodible   (b) Erodible   (c) Alluvial   (d) None of the above

2. The size of the coarse sand is   CO1-U

    (a) 1-2 mm   (b) 0.5-1 mm

    (c) 0.15-0.25 mm   (d) None of the above

3. Delta of water is expressed as   CO1-U

    (a) $\Delta = 8.64\ B/D$ (b) $D = 864\ B/\Delta$ (c) $B = 8.64\ \Delta/D$ (d) $\Delta = 8.64\ D/B$

4. Duty of water unit is   CO1-U

    (a) ha/m^3 (b) ha/m (c) ha/m^2 (d) none of the above

5. The maximum requirement of water for the crop is   CO1-U

    (a) wheat   (b) soya bean   (c) Rice   (d) cotton

6. It is the basic need of water for human is called   CO1-U

    (a) water balance   (b) water use efficiency

    (c) equity   (d) adequacy

7. The GDP of agriculture in India in terms of economy   CO1-U

    (a) 5%   (b) 10%   (c) 20%   (d) 16.5%

8. In India- Pakistan water conflicts in the year of   CO1-U

   (a) 1940   (b) 1943   (c)1948   (d)1941

9. Indicate the salt affected soils   CO1-U

   (a) saline soils   (b) coarse

   (c) fine sand   (d) none of the above

10. In which country has more than cost of water while compare with petrol/diesel   CO1-U

   (a) Saudi Arabia   (b) India   (c) Pakistan   (d) Russia

PART – B (5 x 2= 10 Marks)

11. Define irrigation channel   CO1-U

12. Explain the term of irrigation   CO1-U

13. State the term of canal supply   CO1-U

14. Give the water use efficiency.   CO1-U

15. Define water pricing   CO1-U

PART – C (5 x 16= 80 Marks)

16. (a) Apply Lacey's theory to compute regime channel dimensions for   CO2- App   (16)
       a discharge of 10m³/s.

                              Or

    (b) Apply the concept of channel lining to calculate seepage   CO2- App   (16)
        reduction and estimate its impact on maintenance cost in an
        irrigation canal.

17. (a) Suggest a rotational water distribution schedule for a 1000 ha   CO2-App   (16)
       command area using Warabandi.

                              Or

    (b) Apply the duty–delta relationship to compute irrigation   CO2-App   (16)
        requirement for rice crop with base period of 150 days.

18. (a) Apply Markov chain method to predict dependable rainfall for   CO3- App   (16)
       irrigation scheduling.

                              Or

    (b) Estimate irrigation demand for wheat crop using rainfall and   CO3- App   (16)
        groundwater supply data.

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19. (a) Suggest appropriate performance indicators for evaluating an irrigation system. CO3- App (16)

<div align="center">Or</div>

(b) Apply weekly water balance model to compute irrigation needs of maize crop. CO3- App (16)

20. (a) Analyze the effect of seepage losses on water availability and crop productivity in command areas. CO5-Ana (16)

<div align="center">Or</div>

(b) Analyze the role of institutional frameworks in promoting sustainable irrigation water management. CO5-Ana (16)

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