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**Question Paper Code: 31516**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Fifth Semester

Civil Engineering

01UCE506 – IRRIGATION ENGINEERING

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is plant available moisture?
2. State the need for irrigation.
3. What do you mean by paleo irrigation?
4. Differentiate between crop period and base period.
5. Distinguish between weir and barrage.
6. Define energy dissipaters.
7. Why we provide a fall on a canal?
8. What are canal regulators?
9. Define benefit-cost ratio of irrigation project.
10. What is command area development in water management?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Describe the development of irrigation in India after independence. (8)  
(ii) Explain physical properties of soil. (8)

Or

- (b) (i) Explain the various classification of soil moisture. (8)  
(ii) How will you measure the soil moisture content? (8)

12. (a) After how many days you will supply water to soil in order to insure sufficient irrigation of the crop, if field capacity of the soil = 30 %, permanent wilting point is 12%, density of soil = 1.25 gm/cc, effective depth of root zone = 60 cm, and daily consumptive use of water for the given crop = 12.5 mm. (16)

Or

- (b) Discuss the factors affecting duty and methods to improve it. (16)

13. (a) Discuss the forces causing stability to gravity dams. (16)

Or

- (b) (i) Describe the classification of earthen dams with neat sketch. (8)  
(ii) Explain any one type of spill way. (8)

14. (a) Describe the various classifications of canals according to different alignment. (16)

Or

- (b) Design an irrigation canal based on Lacey's regime theory for the discharge is 40 cumecs and silt factor is 0.9. Assume suitable data where ever necessary. (16)

15. (a) Describe the objectives, needs and principles of participatory irrigation management. (16)

Or

- (b) Explain the impact of water users association formation. (16)