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**Question Paper Code: 50144**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Civil Engineering

15UCE404 WATER RESOURCES AND IRRIGATION ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The consumptive use of water for a crop
  - (a) is measured as the volume of water per unit area
  - (b) is measured as depth of water on irrigated area
  - (c) may be supplied partly by precipitation and partly by irrigation
  - (d) all the above
  
2. Irrigation canals are generally aligned along
  - (a) ridge line
  - (b) contour line
  - (c) valley line
  - (d) straight line
  
3. The measure to remove water logging of land, is
  - (a) to reduce percolation from canals and water courses
  - (b) to increase outflow from the ground water reservoir
  - (c) both (a) and (b)
  - (d) neither (a) nor (b)
  
4. When a canal and a drainage approach each other at the same level, the structure so provided, is
  - (a) an aqueduct
  - (b) a syphon
  - (c) a level crossing
  - (d) inlet and outlet

5. If  $\Delta$  is the depth of water in metre,  $B$  is the number of days of base period and  $D$  is the duty in hectare/cumec, the relationship which holds good, is

(a)  $D = \Delta \frac{8.64D}{B}$

(b)  $B = \Delta \frac{8.64D}{D}$

(c)  $D = \frac{8.64 \Delta}{B}$

(d)  $\Delta = \frac{8.64B}{D}$

6. Meandering of a river generally occurs, in

- (a) rocky stage      (b) delta stage      (c) boulder stage      (d) trough stage

7. A river training work is generally required when the river is

- (a) meandering      (b) aggrading      (c) degrading      (d) all the above

8.  $V$  and  $R$  are the regime mean velocity and hydraulic mean depth respectively in metre. Lacey's silt factor  $f$  is

(a)  $\frac{2 V^2}{\sqrt{3} R}$

(b)  $\frac{3 V^2}{4 R}$

(c)  $\frac{5 V^2}{2 R}$

(d)  $\frac{2 V^2}{5 R}$

9. For standing crops in undulating sandy fields, the best method of irrigation, is

- (a) sprinkler irrigation      (b) free flooding  
(c) check method      (d) furrow method

10. In a barrage, the crest level is kept

- (a) low with large gates      (b) high with large gates  
(c) high with no gates      (d) low with no gates

PART - B (5 x 2 = 10 Marks)

11. What are the benefits of irrigation?
12. List out the methods for improving the duty.
13. Define diversion head work.
14. Mention the objectives of river training work.
15. What do you mean by water users association?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the benefits and ill effects of irrigation. (16)

Or

- (b) Write the history of irrigation projects in India and List out various irrigation projects with reference to Tamilnadu. (16)
17. (a) (i) Derive the relationship between duty and delta. (8)
- (ii) Explain the factors affecting duty. (8)
- Or
- (b) Explain the methods of irrigation efficiencies. (16)
18. (a) Enumerate the various types of Spillway and explain any three types with neat sketch. (16)
- Or
- (b) (i) Briefly explain the classification of wier. (8)
- (ii) Examine the different type and causes of failure of earthen dam with neat sketch. (8)
19. (a) (i) Discuss the various classification in canals. (8)
- (ii) Explain any three cross drainage work with neat sketch. (8)
- Or
- (b) Explain the various types of river training works with neat sketches. (16)
20. (a) Discuss the roles and responsibilities of farmers and governmental agencies in the farmers association. (16)
- Or
- (b) Explain the following:
- (i) Participatory irrigation management (8)
- (ii) Objectives of water management (8)
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