Reg. No. :

Question Paper Code: 45106

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Civil Engineering

14UCE506 - IRRIGATION ENGINEERING

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The water utilizable by plants is available in soils mainly in the form of

    (a) gravity water   (b) capillary water
    (c) hydroscopic water   (d) chemical water

2. 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)

3. The ratio between the area of a crop irrigated and the quantity of water required during its entire period of the growth, is known as

    (a) delta   (b) duty   (c) base period   (d) crop period

4. The consumptive use of water of 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

5. The maximum permissible eccentricity for no tension at the base of a gravity dam is

    (a) B/2   (b) B/4   (c) B/6   (d) B/8

6. In a chute spillway, the flow is usually

    (a) uniform   (b) subcritical   (c) critical   (d) supercritical

7. The weed growth in a canal leads to

    (a) decrease in silting   (b) decrease in discharge
    (c) increase in discharge   (d) increase in velocity of flow

8. When the irrigation canal and the drain are at the same level, then the cross drainage work is achieved by providing a

    (a) aqueduct   (b) super-passage   (c) level crossing   (d) canal syphon

9. Canal outlets are also called

    (a) canal escapes   (b) canal modules
    (c) canal off takes   (d) canal openings

10. For the repairing of an old but sound concrete lining, the lining preferred is

    (a) shotcrete lining   (b) precast concrete lining
    (c) soil cement lining   (d) sodium carbonate lining

PART - B (5 x 2 = 10 Marks)

11. What are the types of irrigation?

12. Define delta of a crop?

13. State diff types of spillways.

14. When the channel is said to be in regime?

15. Define on-farm water management.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain the necessity of irrigation in a tropical country like India.   (8)

       (ii) What are the ill effects of assured irrigation?   (8)

Or

    (b) Write a note on national water policy.   (16)

17. (a) (i) Discuss in detail the various factors affecting duty. (8)

       (ii) Derive the relationship between the duty, delta and base period. (8)

Or

(b) Briefly explain about Irrigation efficiencies. (16)

18. (a) Explain the selection of site for a dam and selection of type of dam. (16)

Or

(b) Briefly explain the different types of spillway. (16)

19. (a) Define Lacey's regime theory. Explain its design procedure of a stable channel. Also list the defects in Lacey's theory. (16)

Or

(b) Explain the subsurface methods of irrigation and discuss its merits and demerits. (16)

20. (a) Describe participatory irrigation management system. (16)

Or

(b) Describe the common criteria for judging the performance of an irrigation system. (16)

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