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Question Paper Code: 45106

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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)

- The moisture content of the soil, after free drainage has removed most of the gravity water, is known as
 - field capacity
 - saturation capacity
 - wilting co-efficient
 - available moisture
- Salinity in irrigation water is measured by
 - SAR value
 - electrical conductivity value
 - pH value
 - none of these
- 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
 - delta
 - duty
 - base period
 - crop period
- The consumptive use of water of a crop
 - is measured as the volume of water per unit area
 - is measured as depth of water on irrigated area
 - may be supplied partly by precipitation and partly by irrigation
 - all the above
- Optimum depth of Kor watering for rice is
 - 135mm
 - 165mm
 - 190mm
 - 215mm

6. The major resisting force in a gravity dam is
- (a) water pressure (b) wave pressure
(c) self-weight of dam (d) uplift pressure
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. The canal, which may frequently encounter cross drainage works, will be a
- (a) watershed canal (b) contour canal
(c) side slope canal (d) none of these
9. Canal outlets are also called
- (a) canal escapes (b) canal modules
(c) canal off takes (d) canal openings
10. The soil becomes, practically, infertile if its p-H value is
- (a) 0 (b) 7 (c) 11 (d) 14

PART - B (5 x 2 = 10 Marks)

11. What is the purpose of irrigation?
12. What is meant by consumptive use of water?
13. Define barrage.
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) Enumerate the method of soil water measurement stating the methods most commonly followed. (16)

Or

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

17. (a) After how many days will you supply water to soil (clay loam) in order to ensure efficient irrigation of the given crop, if

Field capacity of soil = 27%

Permanent wilting point = 14%

Density of soil = 1.5 g/cm^3

Effective depth of root zone = 75 cm

Daily consumptive use of water for the given crop = 11 mm. (16)

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) What are the different forces that may act on gravity dam? Discuss with sketches and write down the expressions of the forces. (16)

19. (a) Describe with sketches about the various types of cross drainage works. (16)

Or

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

20. (a) What kinds of participation are necessary for irrigation management activities? Explain in detail (16)

Or

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