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Question Paper Code: 45106

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

- The irrigation is necessary in an area.
 - where there is a scanty rainfall
 - where the rainfall is non-uniform
 - where commercial crops require more water
 - all the above
- 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

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. Irrigation canals are generally aligned along
(a) ridge line (b) contour line (c) valley line (d) straight line
8. Which of the following is the correct sequence of the parts of a canal system?
(a) head works, distributary, branch canals and minor
(b) head works, main canal, branch canal, distributary and minor
(c) head works, main canal, branch canal, minor and distributary
(d) none of the above
9. For irrigation purposes, the p-H value of water should be
(a) between 3 and 6 (b) between 6 and 8.5
(c) between 8.5 and 11 (d) more than 11
10. The components of on farm developments
(a) crossing in field channel (b) field drain
(c) formation of field channel (d) all the above

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 diversion headwork.
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) Discuss the harmful effects of excess irrigation in agriculture. (16)

Or

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

17. (a) Describe the different components of irrigation efficiency and give the mathematical expressions. (16)

Or

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

18. (a) What is the difference between the weir and barrage? Write the causes of the failure of the weir and their remedies. (16)

Or

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

19. (a) (i) Discuss different ways of alignment of canals. (8)

(ii) Explain the classification of canal based on discharge of canal. (8)

Or

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

20. (a) Describe briefly about Command Area Development (CAD) programme and its functions. (16)

Or

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