

depth of root zone 0.75m. ii) Irrigation water is applied when the moisture content drops to 11%. Determine the water depth required to be applied if the water application efficiency is 83%.

(b) Explain the soil-water relationship with neat sketch. 07

Q-3 Attempt all questions (14)

(a) An earthen channel with a base 3 m wide and side slope 1:1 carries water with a depth of 1 m. the bed slope is 1: 1800. Estimate the discharge. Take value of N in manning's formula $N= 0.04$. 07

(b) Discuss briefly the factors affecting the consumptive use of water. 07

Q-4 Attempt all questions (14)

(a) An irrigation canal has gross commanded area of 75000 hectares out of which 83% cultivable area. The intensity of irrigation for kharif season and rabi season are 68% and 35% respectively. Find the discharge required at the head of the canal if the duty at its head is 820 hectare/cumec for kharif season and 1900 hectare/ cumec for rabi season. 07

(b) Explain the different layouts of tile drains with sketches. 07

Q-5 Attempt all questions (14)

(a) Enumerate various aspect of Multipurpose river valley project. 07

(b) Derive the relationship between Delta, Duty and Base period. 07

Q-6 Attempt all questions (14)

(a) Explain river training work with neat sketch. 08

(b) What are the ill- effects of water logging? How would you prevent water logging? 06

Q-7 Attempt all questions (14)

(a) What are the factors that affect the alignment of a canal? 05

(b) Write short note on Weep hole. 03

(c) Compare Kennedy's and Lacey's theories for the design of irrigation canal in alluvial soil. 06

Q-8 Attempt all questions (14)

(a) Enumerate various types of lining. Explain any two method of lining 07

(b) Differentiate between a permanent and an inundation canal. 03

(c) Write short note on: Approach embankment 04

