



**Module-4**

- 7 a. What is the necessity of irrigation in India and write benefits and ill effects of irrigation? (10 Marks)  
b. Explain in detail system of irrigation. (10 Marks)

**OR**

- 8 a. What is irrigation frequency? Explain the factors affecting on frequency of irrigation. (10 Marks)  
b. The gross commanded area for a distributor is 20000 hectares. 75% of which can be irrigated. The intensity of irrigation for Rabi season is 40% that for Kharif season 10%. If Kov period is 4 weeks for Rabi and 2.5 weeks for Kharif. Determine the out let discharge. Outlet factors for Rabhi and Kharif may be assumed as 1800 hectares/cumecs and 775 hectares/cumec. Also calculate delta for each crop. (10 Marks)

**Module-5**

- 9 a. Write the difference between Lacey's theory and Kennedy's theory. (10 Marks)  
b. The slope of a channel in alluvial soil is  $s = \frac{1}{5000}$ . Lacey's silt factor  $f = 0.9$ . Channel side slope are  $\frac{1}{2}H : 1V$ . Find the channel section and maximum discharge which can be allowed to flow in it. (10 Marks)

**OR**

- 10 a. With a neat sketch, explain zones of storage in a reservoir. (10 Marks)  
b. Explain Hydrologic investigation of reservoir planning? List the points to be consider for selection of site for a reservoir. (10 Marks)

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