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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII • EXAMINATION - SUMMER 2013 Subject Code: 180606 Date: 09/05/2013 Subject Name: Irrigation Water Management (Department Elective-II) Total Marks: 70 Time: 10:30 am TO 01:00 pm **Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** (a) Write short note on õlrrigation Schedulingö. 07 **(b)** What is mean by oWater Loggingo? How does water logging occur? of Explain in brief. **Q.2** (a) Classify the irrigation systems in India. Discuss it. 07 **(b)** What are procedures for layout of fields and irrigation systems? 07 OR **(b)** Give difference between Border strip Irrigation and Check basin Irrigation. 07 **Q.3** (a) List out components of the sprinkler irrigation system. Discuss any three 07 components of the system. **(b)** What are step-by-step procedures for the hydraulic design of sprinkler irrigation system? OR Q.3 (a) Which problems occur from using poor quality irrigation water? 07 **(b)** Write short note on oReclamation of saline soils by leaching methodo. 07 **Q.4** What are the specific advantages of drip irrigation system over sprinkler 07 irrigation system? (b) Plan a suitable drip irrigation system for an orchard on a nearly flat land 07 with medium heavy soil. The dimensions of the field are 360 x 140 m. The source of water is a tube well located at the top corner of the farm. The tree spacing is 6x4m. Emitters are spaced 1m apart in each lateral. The monthly evaporation rate observed with a Class A pan is 240mm. Irrigation is to be applied daily. Determine the discharge capacity of the drip irrigation system. Take, Maximum diameter of wetted circle form by a dripper= 2.7m; Crop co-efficient for orchard=0.8; Pan factor=0.8; Water application efficiency is 90%. OR 0.4 07 (a) Give classification of Drainage in brief.

Q.5 (a) What are the factors influencing land leveling requirement? 07
(b) Classify the different methods of surface irrigation and their sub-groups. 07

OR

(b) What are ill effects of water logging in irrigation?

Q.5 (a) Explain merit and demerit of water users organizations.
(b) A Persian wheel discharge at the rate of 12,000 liters per hour and works for eight hours each day. Estimate the area commanded by the water lift if

for eight hours each day. Estimate the area commanded by the water lift if average depth of irrigation is 10 cm and irrigation interval is 12days.

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