

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – SUMMER 2013

Subject Code: 180606**Date: 09/05/2013****Subject Name: Irrigation Water Management (Department Elective-II)****Time: 10:30 am TO 01:00 pm****Total Marks: 70****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 Irrigation Scheduling. **07**
 (b) What is meant by Water Logging? How does water logging occur? ñ **07**
 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 **07**
 irrigation system?

OR

- Q.3** (a) Which problems occur from using poor quality irrigation water? **07**
 (b) Write short note on Reclamation of saline soils by leaching method. **07**

- Q.4** (a) 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

- Q.4** (a) Give classification of Drainage in brief. **07**
 (b) What are ill effects of water logging in irrigation? **07**

- 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

- Q.5** (a) Explain merit and demerit of water users organizations. **07**
 (b) A Persian wheel discharge at the rate of 12,000 liters per hour and works **07**
 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.
