Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER-VI • EXAMINATION – SUMMER • 2015

Subject Code: X60603 Date: 12/05/2015 **Subject Name: IRRIGATION ENGINEERING** Time: 10:30 am - 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. What is Irrigation and explain the necessity of irrigation. **Q.1** 07 (b) Discuss briefly the benefits as well as ill-effects of irrigation. 07 **Q.2** (a) Enlist the various methods of irrigation and explain any one in detail. 07 **(b)** Explain briefly the merits and demerits of drip irrigation. 07 **(b)** Explain briefly the merits and demerits of Sprinkler irrigation. 07 0.3 (a) Derive a relationship between Duty and Delta. Explain the factors affecting 07 (b) What is water logging? Discuss the effects and remedial measures of water 07 logging. OR Compare Bligh's creep theory and Lanes weighted creep theory. **Q.3 07** (a) Find the field capacity of a soil for the following data: -07 Root zone depth = 2 mExisting water content = 5 %Dry density of soil = 1.5 g/cm³ Water applied to the soil = 500 m^3 Water loss due to evaporation etc. = 10%Area of plot = 2000 sq.metres. **Q.4** (a) Discuss the various types of Earth dams. 07 Enlist the various types of spillway. Describe any one in detail. 07 **(b) Q.4** Enlist the various forces acting on a gravity dam. Explain any one in detail. 07 Enlist the various components of a Diversion headwork. Explain any one in **(b)** 07 detail. Explain different types of buckets used for energy dissipation. **07** Q.5 (a) The slope of a channel in alluvium is S = 1/5000. Lacey's silt factor = 0.9. 07 Channel side slope = 0.5/1. Find the channel section and maximum discharge which can be allowed to flow in it. OR What are the advantages and disadvantages of the canal lining Q.5 07 (b) Differentiate between (a) aqueduct and syphon aqueduct (b) super passage and 07 canal syphon.
