

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – V • EXAMINATION – WINTER • 2014

Subject Code: 350504**Date: 04-12-2014****Subject Name: Utility and Instrumentation in Chemical Plant****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.
4. English version is considered to be Authentic.

- Q.1** (a) Describe the purification of water in details. **07**
(b) Write the methods of Softening of water and describe Soda lime method. **07**
- Q.2** (a) Explain construction & working of Hydrometer. **07**
(b) List out various types of Compressor. Explain Multistage compressor. **07**
OR
(b) Write down the various utilities in chemical industry in details. **07**
- Q.3** (a) Classify various Level measurement devices. Explain Air trap box method. **07**
(b) Write the factors affecting in selection of Refrigerant. **07**
OR
Q.3 (a) List the various methods of Refrigeration. Explain Ice refrigeration. **07**
(b) Explain Lancashire boiler. **07**
- Q.4** (a) List out Pressure measuring Device. Explain Bourdon tube gauge. **07**
(b) Discuss the characteristics of instrumentation in details. **07**
OR
Q. 4 (a) Classify Temperature measuring device. Explain Bi-metallic thermometer. **07**
(b) Explain See back effect, Peltier effect and Thomson effect. **07**
- Q.5** (a) List out viscosity measurement method .Explain Falling sphere method. **07**
(b) Write short notes on PLC & DCS system. **07**
OR
Q.5 (a) Write working and construction Hair hygrometer. **07**
(b) Explain any three characteristics of static and dynamic characteristics **07**
