

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 161701

Date: 21/11/2011

Subject Name: Instrumentation system

Time: 10.30 am -1.00 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) Explain with neat diagram, Large air instrumentation system. 07
(b) Explain types of control panels with necessary diagram. 07
- Q.2 (a) Explain the significance of documentation in project control. 07
(b) For a thermocouple type temperature transducer and pneumatic controller and transmitter, draw PI diagram using ISA symbols. 04
(c) Draw ISA symbols for 03
 1) Safety valve
 2) Damper
 3) Pressure relief valve
- OR (in place of b and c)
- (b) Explain with necessary diagram heat reactivated dryer. Also explain the type and importance of dryers. 07
- Q.3 (a) Explain calibration procedure of master instruments. 07
(b) Explain in detail, classification as per National Electric Code (NEC). 07
- OR
- Q.3 (a) Explain in detail filled-in systems for temperature measurement. 07
(b) Explain design guidelines for flow measurement. 07
- Q.4 (a) Compare Electronic and pneumatic systems with example. 07
(b) Explain different measuring instruments for level measurement with advantages / disadvantages of each. 07
- OR
- Q.4 (a) Explain in details with necessary equations, control valve sizing. 07
(b) Explain the role and importance and nature of duties to be performed by Project Manager. 07
- Q.5 (a) Explain with necessary examples, the valve selection for different applications. 07
(b) Compare with advantages/disadvantages flat face and back front control panels. 07
- OR
- Q.5 (a) Explain different type of compressor with neat sketches. 07
(b) Explain intrinsic safety in detail. 07