

2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY**III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS
PROCESS OF INSTRUMENTATIONS
(CHEMICAL ENGINEERING)**

NOVEMBER 2005

TIME – 3 HOUR
MARK – 80**Answer any FIVE Questions
All Questions carry equal marks**

1. What are the different elements of a measuring instrument? Describe in detail. [16]
2. What is the need for cold junction compensation and explain one method to implement it. [16]
3. What methods of analysis can be used for determining composition of
 - (a) Steels
 - (b) Hydrocarbon mixtures
 - (c) Mixture of Ammonia in air Explain anyone of them in detail [16]
4. (a) Describe the dew point method of measurement of absolute humidity.
(b) Write the principle of gas analysis by thermal conductivity. [9+7]
5. Explain in detail the applicability, range, advantages and disadvantages of a metallic and non metallic diaphragm pressure elements [16]
6. A diaphragm-box and pressure system is used to measure liquid level in a cubical tank 10 ft on a side. The tank contains liquid of specific gravity 0.8 at ambient temperature. Calculate the span of the pressure gage. [16]
7. Draw the figure of a pitot tube fitted in a pipe line and indicate clearly the parts in the tube and the points of pressure measurement. [16]
8. Describe various types of recording instruments used in process industries? Compare their merits and demerits. [16]