

No. of Printed Pages : 03

Roll No.

CC22

M.Tech. EXAMINATION, May 2019

(Third Semester)

(B. Scheme) (Re-appear)

EE(I&C)

MIC603B

PROCESS CONTROL AND
INSTRUMENTATION

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-32/16)M-CC22

P.T.O.

Unit I

1. Explain the terms “Gas analysis by thermal conductivity” and “Spectroscopic analysis by absorption”. **15**
2. Write short notes on the following :
 - (a) Refractometer
 - (b) Thermocouple wells
 - (c) Mass and colour measurement spectrometers. **5×3**

Unit II

3. Explain the measuring elements for gauge pressure and vacuum. **15**
4. Discuss in brief :
 - (a) Measuring pressure in corrosive liquids
 - (b) Pressure measurements in open vessels
 - (c) Head flow and Area flow meters. **5×3**

Unit III

5. Discuss the development of molecular arrays as memory stores with suitable example. **15**
6. Define Time-Response. Explain transient response to step, impulse and sinusoidal forcing function of second order system. **15**

Unit IV

7. Write down the procedural steps while reduction of physical control system to block diagram. Also explain PI controller in closed loop system. **15**
8. Explain the Bode Stability criterion, gain margin and phase margin. **15**