PART-A (25 Marks)

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question

1.a)	What are the various sources of error in measuring instrument?	[2]
b)	What is the environmental factors on the design of measuring instruments?	[3]
c)	Give the classification of pressure measuring instruments.	[2]
d)	What is the need for calibration of measuring instruments?	[3]
e)	List out the applications of magnetic level measurement.	[2]
f)	Explain the limitations of non-contact type tachometers.	[3]
g)	What are the limitations of elastic force meters?	[2]
h)	List out various principles used for stress and strain measurement.	[3]
i)	Give the classification of control systems.	[2]
j)	Explain the applications of servomechanism.	[3]

www.manaresults.co.in

PART-B

Explain the basic principles of measurement. OR Considering rota meter as an example give the functional description of various elements.

4.a) Explain the use of piezo electric transducers for displacement measurement.

- Discuss various principles of temperature measurement. b) [5+5] OR
- 5.a) Explain the use of thermal conductivity gauges for pressure measurement.
- Describe the arrangement of thermocouples for the measurement of average temperature b) of a room. [5+5]
- Give the constructional details and explain the working of a cryogenic fuel level 6.a) indicator.
 - Explain the working principle of electrical tachometer. [5+5]b)

OR

Code No: 117EA

Time: 3 Hours

2.

3.

Note: This question paper contains two parts A and B.

carries 10 marks and may have a, b, c as sub questions.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD B. Tech IV Year I Semester Examinations, April/May - 2018 INSTRUMENTATION AND CONTROL SYSTEMS

(Common to ME, AME)

Max. Marks: 75

R13

(50 Marks)

[10]

[10]

7.a) b)	Explain the applications and limitations of Doppler effect anemometer. Explain the principle of working of vibrometer.	[5+5]
8.a) b)	Explain how strain gauges can be used for the measurement of bending stresses? Explain the working of sling psychrometer. OR	[5+5]
9.	Discuss in detail the working of various types of dynamometers used for measurement.	or force [10]
10.	With the help of a suitable example explain the use of block diagrams for analy performance of a system.	zing the [10]
11.a) b)	Discuss the importance of control systems. Explain the working of temperature control system.	[5+5]

--00000--

www.manaresults.co.in