

Code No: **R1641354**

R16

Set No. 1

IV B.Tech I Semester Regular Examinations, October/November-2019
MECHANICAL MEASUREMENTS AND INSTRUMENTATION
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

PART-A (14 Marks)

1. a) Explain indirect method of measurement. [2]
b) Define accuracy and precision. [3]
c) Explain the relation between atmospheric pressure, gauge pressure and absolute pressure. [2]
d) What are the metals used for manufacturing strain gauges? [2]
e) What is thermocouple? [2]
f) Explain the working principle of tachometer. [3]

PART-B (4x14 = 56 Marks)

2. a) Explain the functional elements of a measurement system. [7]
b) What is the different classification of measurements? Explain. [7]
3. a) Explain the working of passive and active transducers. [7]
b) Explain signal conditioning system. [7]
4. a) Describe the working of a well type manometer. [7]
b) Explain the working of McLeod pressure gauge used for measuring vacuum pressure. [7]
5. a) Explain about the temperature compensation of a strain gauge with four active gauges. [7]
b) Describe the method of strain measurement in a cantilever using two active gauges. [7]
6. a) Explain different types of liquid filled thermometers. [7]
b) Discuss the construction and principle of vapor pressure thermometer. [7]
7. a) Explain the working of electrical resistance type thermometer. [7]
b) What are different types of microphones? Explain. [7]

