APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER M. TECH DEGREE EXAMINATION
Electronics & Communication Engineering-Interdisciplinary Engineering
(Robotics and Automation)
04EC6907—Measurements and Sensors for Automation

Max. Marks: 60   Duration: 3 Hours

PART A
Answer All Questions
Each question carries 3 marks

1. List the desirable and undesirable static characteristics of instruments.
2. Define the following terms (i) Transient response (ii) Steady state response
3. Differentiate between active and passive transducer.
4. Compare laminar and turbulent flow on account of Reynold number
5. Classify different methods of level measurement
6. Give example for reference electrode and metal electrode.
7. Explain feedback pneumatic load cell
8. Elaborate Nano sensor.

PART B
Each question carries 6 marks

9. What are the types of instruments? Also describe the elements of instruments

OR

10. Illustrate standards of measurement.

11. Derive the expression for time response of a second order under damped system when subjected to unit ramp input.

OR

12. Differentiate standards for calibration

13. Explain linear and rotary displacement measurement technique.

OR

14. How is a bath tub curve associated with failures of transducers?

15. Explain McLeod gauge for vacuum measurement.

OR

16. Derive the expression for variable head flow meters for incompressible fluids.

17. Elaborate Magnetostrictive and Hall Effect sensor.

OR

18. Illustrate photomultiplier and scintillation detectors.

19. Distinguish the effects of positive and negative feedback in the performance of a closed loop system

OR

20. Give in detail Analog to Digital and Digital to Analog Conversion in Sensor signal Conditioning.