Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

SIXTH SEMESTER B.TECH. (INSTRUMENTATION AND CONTROL ENGG.)

END SEMESTER EXAMINATIONS, APRIL/MAY 2017

SUBJECT: ADVANCED SENSOR TECHNOLOGY [ICE 4009]

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Use neat diagrams where ever needed.

1A.	List the technologies which drive the revolution of sensors.	**3**
1B.	Energy domain classifications creates a sense of confusion. Justify	**3**
1C.	What were the expectations from advanced sensor technologies	**4**
2A.	Discuss any two reasons why optical sensor is advantageous over physical and chemical sensing techniques	**4**
2B.	Analyze the design aspects of Fibre-optic fluorimmunoassay sensors	**3**
2C.	Design a pressure measurement technique using optical fibers for low pressure measurements	**3**
3A.	'Accuracy of optical sensors depends on optical source' Comment and Justify	**3**
3B.	Name any two disadvantages of magnetostrictive sensors	**3**
3C.	Discuss the techniques for detection of surface and dimensional flaws on a conductive structure	**4**
4A.	Probe the velocity measuring technique by RF and DC squid.	**4**
4B.	Compare servo and resistive accelerometers	**3**
4C.	With the neat diagram explain the working of CO gas MOS sensor	**3**
5A.	Is a thermal conductivity sensor used in automobile wind screen wiper? Justify.	**2**
5B.	Describe the construction and working of pellistor's	**3**
5C.	Compare any two sensing technique for soil moisture measurement	**5**