Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

SEVENTH SEMESTER B.TECH (INSTRUMENTATION AND CONTROL ENGINEERING)

END SEMESTER EXAMINATION, NOV/DEC 2015

SUBJECT: MULTI SENSOR DATA FUSION [ICE 435]

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ANY FIVE FULL** questions.

❖ Missing data may be suitably assumed.

1A.	Discuss the role of data fusion	**5**
1B.	List the different fusion types and also briefly explain each type with an example	**5**
2A.	Discuss sensor observation model used in data fusion	**4**
2B.	Compare decentralized and hierarchical architecture of sensor node with an example	**4**
2C.	Briefly describe the need for common representation format in sensor data fusion process	**2**
3A.	Illustrate the process of kernel density estimation spatial alignment technique with example	**4**
3B.	Discuss the process of radiometric normalization.	**3**
3C.	Explain the information processing cycle of data fusion process	**3**
4A.	Analyze the key issues of integrating data fusion and resource management level of data fusion	**5**
4B.	With an example explain the Thompoulo's data fusion framework	**5**
5A.	Explain the process of validation in Esteban multi sensor framework	**4**
5B.	Describe the process of data registration in data fusion	**2**
5C.	With suitable example, explain implementation of gating and nearest neighborhood data association algorithms.	**4**
6A.	Compare puzzle solving and command-control Metaphor techniques of data fusion automation	**3**
6B.	What is meant by layered network architecture? Explain its functions.	**3**
6C.	Explain single node detection fundamental of distributed decision fusion with an example	**4**