Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VII SEMESTER B.TECH. (COMUPTER AND COMMUNICATION ENGINEERING)

END SEMESTER EXAMINATIONS, NOVEMBER 2017

SUBJECT: WIRELESS SENSOR AND AD-HOC NETWORKS [ICT 4151]

REVISED CREDIT SYSTEM
(16/11/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- Answer ALL the questions.
- Missing data if any, may be suitably assumed.

1A.	List and explain design challenges of sensor networks.	5
1B.	What is the relation between energy saving and sleep overhead? Derive an equation to prove the same.	3
1C.	What are the different programming paradigms? Which is suitable for sensor nodes? Justify your answer.	2
2A.	How does sink communicate with sensors? What are the different architectures available for WSN? Briefly explain each architecture.	5
2B.	Why do nodes have mobility in a WSN scenario? What are the possible types of mobility?	3
2C.	What is busy tone solution? How does it help random access protocols?	2
3A.	Why do sensor nodes experience drift in the clock? What are the challenges to attain time synchronization in WSN?	5
3B.	Compare S-MAC and SMACS protocols.	3
3C.	What are the impacts of homogenous and heterogeneous sensors on node clustering?	2
4A.	Describe the operations of directed diffusion data centric protocol to connect the sink with sensors.	5
4B.	What are the route discovery, route expiry, and loop managing strategies used in AODV?	3
4C.	"The localization protocols face several challenges for distributed location estimation". List those challenges.	2
5A.	List and explain different attacks on physical sensor motes.	5
5B.	Define QoS attributes which are highly dependent upon the application of WSN.	3
5C.	What are voids or holes in Unicast location based routing?	2