Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH. (INFORMATION TECHNOLOGY | COMPUTER AND COMMUNICATION ENGINEERING)

MAKE UP EXAMINATIONS, DECEMBER 2019

SUBJECT: PROGRAM ELECTIVE-IV INTERNET OF THINGS [ICT 4019]

REVISED CREDIT SYSTEM
(28/12/2019)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A. Explain the following with respect to smart objects and its connectivity. **5**

a) Telemetry b)Embedded systems c)Ubiquitous computing d)Mobile Telephony

1B. Briefly explain the system level and network level components of a smartgrid. **3**

1C. Illustrate with neat diagrams the messaging modes of CoAP(Constrained application protocol). **2**

2A. What are transducers? Explain in detail the sensor classes. **5**

2B. With neat diagram explain OGC functional architecture for sensor system. **3**

2C. Illustrate how wireless HART is used for reliable collision free communication? **2**

3A. Explain different modes of operation of a Bluetooth device in a connection state. With the help of a neat diagram describe scatternet. **5**

3B. Explain with a neat diagram the RFID reader components, also pen down the challenges. **3**

3C. Differentiate between the following with respect to Internet of things technology. **2**
(i) IIoT vs IoT. (ii)Traditional grid vs Smart grid

4A. List and explain the major requirements for smart city architecture. **5**

4B. Explain with a neat diagram the communication architecture of WBANs. **3**

4C.	Explain in brief for the following with respect to a smart car. (i) Computing and communication unit (ii) Application unit	**2**
5A.	Explain the following with respect to M2M data management. (i)Data validation (ii)Data processing (iii)Data remenance (iv) Data Analysis (v) Data Acquisition.	**5**
5B.	Discuss the messaging modes in AMQP with a neat diagram.	**3**
5C.	List and explain any four M2M applications in brief.	**2**