Hall Ticket No | | | | | | | | | | |  Question Paper Code: ACS510

# INSTITUTE OF AERONAUTICAL ENGINEERING

**(Autonomous)**

B.Tech VI Semester End Examinations (Regular) - May, 2019

**Regulation: IARE – R16**

## INTERNET OF THINGS

**Time: 3 Hours** **(Common to CSE | IT)** **Max Marks: 70**

**Answer ONE Question from each Unit**
**All Questions Carry Equal Marks**
**All parts of the question must be answered in one place only**

### UNIT – I

1. (a) Define Internet of Things(IoT). What are the various characteristics of IoT. Explain in detail about logical design of IoT. **[7M]**
   (b) Discuss in detail about Fleet Tracking, Shipment Monitoring and Remote Vehicle Diagnostics. **[7M]**

2. (a) Compare and contrast various IoT Levels and deployment templates. **[7M]**
   (b) Determine the various communication models that can be used for weather monitoring system. Which is a more appropriate model for this system? Describe its pros and cons. **[7M]**

### UNIT – II

3. (a) What is the function of centralized network controller in SDN? Distinguish between IoT and M2M. **[7M]**
   (b) Discuss in detail about Network Function Virtualization (NFV) of IoT with NFV infrastructure and NFV Management Orchestration. **[7M]**

4. (a) Explain in detail about Software Defined Networking (SDN) with architecture. **[7M]**
   (b) Describe briefly about the basics of IoT System Management with NETCONF-YANG. **[7M]**

### UNIT – III

5. (a) List the various techniques for file handling in python. **[7M]**
   (b) Demonstrate the IoT architecture reference model (ARM) with neat diagram and explain the IoT - A tree of architectural reference building blocks. **[7M]**

6. (a) Write short notes on control flows in python. Explain in detail about functions in python. **[7M]**
   (b) An ARM can be visualized as the matrix that eventually derives into a large set of concrete IoT architectures. Justify your answer with neat diagram. **[7M]**

### UNIT – IV

7. (a) Explain in detail about serial interface in Raspberry Pi. **[7M]**
   (b) Discuss in detail about interfacing an LED and switch with Raspberry Pi. **[7M]**

8. (a) Discuss Raspberry Pi GPIO with interfacing LED and switch with Raspberry Pi. **[7M]**

   (b) How Rasberry Pi different from a desktop computer? Justify your answer with an illustration. **[7M]**

## UNIT – V

9. (a) Explain in detail about weather monitoring system with IoT architecture design and functions of the system. **[7M]**

   (b) Design a case study for illustrating IoT design for smart cities with a real time example. **[7M]**

10. (a) What is Django architecture? Discuss in detail about WEB application framework. **[7M]**

    (b) Extend the functionality of the home intrusion detection IoT system by interfacing a webcam. Implement a function in the controller to capture an image from the webcam and send it as an attachment in the email alert when an intrusion is detected. **[7M]**