

B.E/B.TECH. Degree Examination, December 2020
Seventh Semester
IT16701 INTERNET OF THINGS
(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Zigbee network layer supports the following topologies except:
 - a. Tree
 - b. bus
 - c. star
 - d. mesh
2. Amazon Web Services falls into which of the following cloud-computing category?
 - a. Platform as a Service
 - b. Software as a Service
 - c. Infrastructure as a Service
 - d. Back-end as a Service
3. Pick the phrase that best describes Software Defined Networking (SDN)
 - a) SDN is an architecture that separates the network control and forwarding functions.
 - b) SDN is a protocol that enables communications between network devices.
 - c) SDN is an application that can be used to manage networks.
 - d) SDN is a network device of advanced features.
4. The NETCONF architecture has _____ Layers.
 - a. 3
 - b. 6
 - c. 5
 - d. 4
5. Choose an IoT system and describe the communication model and the IoT level.
6. Compare the features of single board mini computers.
7. Write the Django model (models.py) for Weather data.
8. Describe the term “Infrastructure –as –a –code” with suitable example.

PART B - (4 X16 = 64 marks)

9. (a) (i) Write a python program to interface an LED and switch with (10) Raspberry Pi and to increase and decrease the intensity of LED on Switch press event.

- (ii) With neat diagram describe the GPIO pins of Raspberry pi. (6)

(OR)

- (b) (i) Show with proper illustration and explanation how M2M applications, real time streaming applications and business messaging applications interface with the lower layer protocols to send data over network. (16)
10. (a) (i) Explain in detail about the open flow switch components and flow table entries. (8)
- (ii) Brief about the functions of NFV architecture's key elements. (8)
- (OR)**
- (b) (i) Discuss in detail about the protocol used in building automation and control network. (10)
- (ii) Brief about the wireless technology that addresses the needs of low-power wireless IoT networks. (6)
11. (a) (i) Identify the use cases, entities, concepts and objects of "Smart agriculture system" and sketch the domain and information model. (16)
- (OR)**
- (b) (i) Define the IoT level and the functional groups of a "Smart Health care system". Show with neat sketch the mapping of deployment levels to functional groups and function groups to operational views. (16)
12. (a) (i) Write a python program to model the publish- subscribe messaging pattern using WAMP AutoBahn. (8)
- (ii) Write a python program for Amazon SQS service to get the list of all message queues, Count the number of messages, and to read and write from a message Queue. (8)
- (OR)**
- (b) (i) Using Django REST framework develop a RESTful web API for "Home Automation System". (16)