NARSIMHA REDDY
ENGINEERING COLLEGE
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Estd.2007

FUNDAMENTALS OF INTERNET OF THINGS
(23EC614)

QUESTION BANK

UNIT–I

UNIT–I			
PART–A (1 Mark)			
S.No	**Question**	**BT**	**CO**
1	Define IoT.	L1	CO1
2	List any two characteristics of IoT.	L1	CO1
3	What is IoT architecture?	L1	CO1
4	What is sensing in IoT?	L1	CO1
5	Define actuation.	L1	CO1
6	What is meant by physical design of IoT?	L1	CO1
7	What is a communication protocol?	L1	CO1
8	Define a sensor network.	L1	CO1
9	What is an IoT device?	L1	CO1
10	Name any one functional block of IoT.	L1	CO1

PART–B (5 Marks)			
S.No	**Question**	**BT**	**CO**
1	Explain the characteristics of IoT with examples.	L2	CO1
2	Describe the physical design of IoT.	L2	CO1
3	Illustrate the functional blocks of IoT with a neat diagram.	L3	CO1
4	Discuss sensing and actuation in IoT.	L3	CO1
5	Explain communication protocols used in IoT.	L4	CO1
6	Describe basics of networking in IoT.	L2	CO1
7	Explain the architecture of sensor networks.	L3	CO1
8	Differentiate between computer networks and IoT.	L4	CO1
9	Explain any real-time IoT application.	L3	CO1
10	Analyze challenges in IoT networking and communication.	L4	CO1

UNIT–II			
PART–A (1 Mark)			
S.No	**Question**	**BT**	**CO**
1	Expand M2M.	L1	CO2
2	State one difference between IoT and M2M.	L1	CO2
3	What is interoperability?	L1	CO2
4	Define Arduino.	L1	CO2
5	What is an actuator?	L1	CO2
6	What is digital pin in Arduino?	L1	CO2

7	What is analog input?	L1	CO2
8	Define Arduino sketch.	L1	CO2
9	Name any sensor used with Arduino.	L1	CO2
10	Define serial communication.	L1	CO2

PART–B (5 Marks)

S.No	Question	BT	CO
1	Compare IoT and M2M with examples.	L4	CO2
2	Explain interoperability issues in IoT.	L4	CO2
3	Describe the structure and programming model of Arduino.	L2	CO2
4	Explain sensor interfacing with Arduino.	L3	CO2
5	Describe actuator integration with Arduino.	L3	CO2
6	Write an Arduino program to read a temperature sensor.	L3	CO2
7	Explain M2M communication architecture.	L2	CO2
8	Discuss communication technologies used in M2M.	L4	CO2
9	Explain data transfer between Arduino and cloud services.	L3	CO2
10	Write notes on serial and wireless communication in Arduino.	L2	CO2

UNIT–III

PART–A (1 Mark)

S.No	Question	BT	CO
1	What is Python?	L1	CO3
2	Mention one feature of Python.	L1	CO3
3	What is Raspberry Pi?	L1	CO3
4	Name one OS used in Raspberry Pi.	L1	CO3
5	Define GPIO.	L1	CO3
6	What is interfacing?	L1	CO3
7	Mention one application of Raspberry Pi.	L1	CO3
8	What is a Python library?	L1	CO3
9	Define PWM.	L1	CO3
10	What is IDLE in Python?	L1	CO3

PART–B (5 Marks)

S.No	Question	BT	CO
1	Explain the importance of Python in IoT development.	L2	CO3
2	Describe hardware features of Raspberry Pi.	L2	CO3
3	Illustrate interfacing of sensors with Raspberry Pi.	L3	CO3
4	Write a Python program to blink an LED using Raspberry Pi.	L3	CO3
5	Explain installation and usage of Raspbian OS.	L2	CO3
6	Explain GPIO pin functionalities with examples.	L3	CO3
7	Discuss IoT implementation using Raspberry Pi.	L4	CO3

8	Explain network communication using Python scripts.	L4	CO3
9	Describe interfacing of Raspberry Pi with temperature & humidity sensor.	L3	CO3
10	Explain data acquisition using Python on Raspberry Pi.	L4	CO3

UNIT–IV			
PART–A (1 Mark)			
S. No	**Question**	**BT**	**CO**
1	Expand SDN.	L1	CO4
2	What is SDN controller?	L1	CO4
3	Define data analytics.	L1	CO4
4	What is OpenFlow?	L1	CO4
5	What is a northbound API?	L1	CO4
6	Define southbound interface.	L1	CO4
7	What is virtualization?	L1	CO4
8	What is data aggregation?	L1	CO4
9	Mention one benefit of SDN.	L1	CO4
10	Define SDN architecture.	L1	CO4

PART–B (5 Marks)			
S. No	**Question**	**BT**	**CO**
1	Explain SDN architecture with a neat diagram.	L3	CO4
2	Describe SDN integration with IoT applications.	L4	CO4
3	Explain the role of SDN controller.	L2	CO4
4	Discuss OpenFlow protocol in detail.	L4	CO4
5	Explain different data handling techniques in IoT.	L2	CO4
6	Describe IoT data analytics with examples.	L3	CO4
7	Explain virtualization in the context of IoT.	L4	CO4
8	Discuss IoT big data challenges.	L4	CO4
9	Explain how SDN improves IoT scalability.	L3	CO4
10	Analyze SDN-enabled IoT applications.	L4	CO4

UNIT–V			
PART–A (1 Mark)			
S.No	**Question**	**BT**	**CO**
1	Define cloud computing.	L1	CO5
2	What is Sensor-Cloud?	L1	CO5
3	Define smart city.	L1	CO5

4	Mention one application of smart home.	L1	CO5
5	What are connected vehicles?	L1	CO5
6	Define smart grid.	L1	CO5
7	Give an example of industrial IoT.	L1	CO5
8	What is healthcare IoT?	L1	CO5
9	Define activity monitoring.	L1	CO5
10	Name any one cloud platform for IoT.	L1	CO5

PART–B (5 Marks)			
S.No	**Question**	**BT**	**CO**
1	Explain the concept of Sensor-Cloud.	L2	CO5
2	Describe smart city architecture and IoT's role.	L3	CO5
3	Explain IoT applications in smart homes.	L3	CO5
4	Discuss IoT in connected vehicles.	L4	CO5
5	Explain the working of smart grids.	L3	CO5
6	Describe Industrial IoT with examples.	L3	CO5
7	Case study: IoT in agriculture.	L4	CO5
8	Case study: IoT in healthcare monitoring.	L4	CO5
9	Explain activity monitoring systems using IoT.	L3	CO5
10	Discuss cloud computing models for IoT.	L4	CO5