PAPER ID-420207

Subject Code: KCA043

Roll No: | | | | | | | | | | | | | |

MCA
(SEM IV) THEORY EXAMINATION 2021-22
INTERNET OF THINGS

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2*10 = 20

Qno	Questions	CO
(a)	What is the difference between M2M and IoT?	1
(b)	Define Internet of Things with suitable example.	1
(c)	Discuss different categories of sensors.	2
(d)	Describe the uses of actuators in devices.	2
(e)	Explain the purpose of MAC Protocol.	3
(f)	Discuss the features of 6LoWPAN.	3
(g)	Why is an IDE required for developing a device platform for an IoT application?	4
(h)	Differentiate between Arduino Pi and desktop computer.	4
(i)	What are different security challenges in IoT?	5
(j)	Write some applications of IIoT.	5

SECTION B

2. Attempt any *three* of the following: 10*3 = 30

(a)	Explain major components of IoT System.	1
(b)	Explain the Radio Frequency Identification (RFID) technology.	2
(c)	Illustrate the features of RPL? How do they enable routing in a lossy environment?	3
(d)	Determine the purpose and functioning of Arduino IDE.	4
(e)	Explain how IoT technology can used in the following application areas: i) Smart Parking ii) Smart roads in smart cities	5

SECTION C

3. Attempt any *one* part of the following: 10*1 = 10

(a)	Describe the conceptual frameworks using equation which give the steps at various levels or layers in IoT applications.	1
(b)	Discuss different techniques involved during data gathering and dissemination while building an IoT/M2M Applications.	1

4. Attempt any *one* part of the following: 10 *1 = 10

(a)	What is relation between WSN and IoT? Explain with example.	2
(b)	Compare the features of Intel Galileo, Raspberry and BeagleBone boards for the IoT applications.	2

5. Attempt any *one* part of the following: 10*1 = 10

(a)	Discuss various sensor node deployment models or approaches.	3
(b)	Summarize some of the major wireless medium access issues in IoT.	3

6. Attempt any *one* part of the following: 10*1 = 10

(a)	Illustrate how to interface a LED to Arduino and write a program to blink.	4
(b)	Discuss arduino board pin with diagram.	4

7. Attempt any *one* part of the following: 10*1 = 10

(a)	Explain the application of IoT in home automation systems.	5
(b)	Discuss the designing of smart street lightening in smart cities.	5