GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022
IOT TECHNOLOGY
MCE301B

TIME ALLOTTED: 3 HOURS **FULL MARKS: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

			Marks	CO No
1.	(i)	What type of input signals does a Raspberry Pi support? a) Analog b) Digital c) Neither Analog nor Digital d) Both Analog and Digital	1	CO2
	(ii)	In MQTT who controls publish-subscribe messaging pattern? a) Publisher b) Subscriber c) Broker d) Service provider	1	CO2
	(iii)	The Bluetooth technology operates in the ISM band at a) 2.4 to 2.485 GHz b) 1.4 to 2.485 GHz c) 2.4 to 2.485 MHz d) None of the above	1	CO3
	(iv)	Which of the following is the way in which an IoT device is associated with data? a) Internet b) Cloud c) Automata d) Network	1	CO1
	(v)	Which one of the following protocols is lightweight? a) IP b) HTTP c) MQTT d) CoAP	1	CO2
	(vi)	Which network topology is popularly used in Zigbee Network? a) Bus b) Star c) Mesh d) Ring	1	CO3

(vii)	Which of the communication modules does a Raspberry Pi device support? a) Ethernet b) WiFi c) Bluetooth d) All of these	1	CO2
(viii)	In cloud computing which of the following components contain SaaS? a) Application b) Platform c) Storage d) Infrastructure	1	CO3
(ix)	Typically, in a smart vehicle, GPS connects to which of the following? a) Router b) Gateway c) Any WiFi device d) Satellite	1	CO1
(x)	What is the process of examining datasets in order to draw conclusions called? a) Data fusion b) Data fission c) Data analysis d) Data analytics	1	CO4
(xi)	What is another name of the tactile sensor? a) Weight sensor b) Imaging sensor c) Proximity sensor d) Touch sensor	1	CO2
(xii)	The bit length of the IPV4 is _____ a) 8 bits b) 16 bits c) 32 bits d) 128 bits	1	CO1

GROUP – B
(Short Answer Type Questions)

Answer any ***three*** from the following: **3×5=15**

			Marks	CO No
2.		Explain with diagram different components of Internet of Things.	5	CO1
3.		State the features of Raspberry Pi.	5	CO3
4.		Briefly explain different uses of IOT in smart city project.	5	CO5
5.		State the use of Bluetooth in IoT.	5	CO2
6.	(a)	Give examples of cloud services provider.	2	CO4
	(b)	State importance of authentication and security in cloud.	3	CO4

GROUP – C
(Long Answer Type Questions)
Answer any three from the following: 3×15=45

			Marks	CO No
7.	(a)	Explain the following sensors in brief PIR, DHT, ultrasonic, camera.	8	CO1
	(b)	Define actuator. Explain the following actuators in brief relay, solenoid valve, motor.	7	CO1
8.	(a)	Explain the MQTT protocol.	8	CO2
	(b)	Explain the difference between MQTT and CoAP protocol?	7	CO2
9.	(a)	Explain the role of cloud in IoT.	5	CO4
	(b)	Explain SaaS model of cloud.	5	CO4
	(c)	Compare among different service models of cloud.	5	CO4
10.		Illustrate IoT applications in agriculture and activity monitoring in healthcare.	15	CO5
11.		Write short notes on (any three)	3x5 = 15	
	(a)	Wireless Sensor Networks	5	CO2
	(b)	Scalar and Vector sensor	5	CO1
	(c)	ZigBee	5	CO2
	(d)	Internet of Drone Things	5	CO5
	(e)	Industry 4.0	5	CO1