

K. J. Somaiya Institute of Engineering and Information Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Subject Code:ITC504

Subject Name: Internet of things

Date:09/12/2022

Nov – Dec 2022 (B.Tech / M.Tech.) Program: Information Technology Examination: TY Semester: V Course Code: ITC504 and Course Name: Internet of Things Duration: 2.5 Hours Max. Marks: 60				
Instructions: (1)All questions are compulsory. (2)Draw neat diagrams wherever applicable. (3)Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Discuss any four challenges of IoT	2	CO1	U
ii)	Explain level sensor.	2	CO2	U
iii)	Discuss application of voltage sensor.	2	CO2	U
iv)	List the File management level commands of Raspberry pi with explanation.	2	CO5	U
v)	List any four Libraries of arduino and there usage.	2	CO3	U
vi)	Discuss application of LilyPad Arduino	2	CO3	U
vii)	Differentiate between arduino vs Raspberry Pi	2	CO4	U
viii)	List components AWS IoT.	2	CO6	U
Q.2	Solve any four questions out of six.	16		
i)	Draw and Explain IoT layer architecture	4	CO1	U
ii)	List & discuss different actuator that is used in IoT.	4	CO2	U
iii)	Write a short note on thingsboard	4	CO3	U
iv)	Discuss MQTT messaging service.	4	CO4	U
v)	Examine integration of ultrasonic sensor with thingspeak.List thingspeak features.	4	CO5	AN
vi)	Discuss AWS-IoT rule engine service in details.	4	CO6	U

Q.3	Solve any two questions out of three.	16	BT	CO
i)	Explain cloud storage model.	8	AP	CO6
ii)	Write a Arduino code for following. 1.LCD Display 2. Relay	8	U	CO3
iii)	Sketch and explain Raspberry Pi pin diagram	8	AP	CO4
Q.4	Solve any two questions out of three.	16	BT	CO
i)	IoT and AI based Smart City Solution for Public Utilities like surveillance, garbage pickup, road maintenance, encroachment detection, incident reporting, virtual patrolling etc. Design complete IoT based system for the given problem definition. Explain its working with its challenges.	8	U	CO1
ii)	Explain following Communication protocols. 1.Zigbee 2.Wifi	8	AN	CO2
iii)	Perform following operation using Raspberry pi 1.Tweet message on twitter 2.Display "welcome message on lcd"	8	AP	CO5
