CBCS SCHEME

USN		17CS81
USIN		

Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Internet of Things and Applications

	Tin	ne: 3	Shrs. Max. Max. Max. Max. Max. Max. Max. Max	arks: 100
		N	ote: Answer any FIVE full questions, choosing ONE full question from each mod	
			Module-1	
	1	a.	Define IoT. Discuss Genesis of IoT. Differentiate between IoT and digitization.	(10 Marks)
ice.	•	b.	Compare and contrast IT and OT.	
act				(05 Marks)
alpr		C.	Explain the different challenges of IoT.	(05 Marks)
m			OR	
d as	2	a.	Describe IoT World Forum (IoTWF) standardized architecture.	(10 Marks)
ate		b.	Write a short note on Backhaul Technologies.	(04 Marks)
s.		c.	Differentiate between edge computing and fog computing. Define the character	
age II b			computing. Define the characteristics of fog computing.	(06 Marks)
k p wij			comparing. Define the characteristics of log comparing.	(00 Marks)
g blank pages. = 50, will be treated as malpractice.			Module-2	
ng l 8 =	3	a.	Define Sensors and Actuators. With a neat diagram, explain how actuators and	nd sensors
laining 42+8			interact with physical world.	(10 Marks)
ema		b.	What is SANET? List its advantages and disadvantages. Explain 'Data Aggree	egation' in
en e			WSNs (Wireless Sensor Networks).	(10 Marks)
on th			O.D.	
es c			OR	
tior	4	a.	What is Zigbee? Explain 802.15.4 physical and MAC layer.	(10 Marks)
ross		b.	Explain LoRaWAN in detail with necessary diagram.	(10 Marks)
al ci			Module-3	
nog	5	a.	What are the advantages of IP suite for IoT?	(05 Marks)
diag or ar		b.	Differentiate between Adoption and Adaptation model of IP.	(05 Marks)
aw		c.	What is 6TiSCH? Explain the schedule management mechanism of 6TiSCH.	(10 Marks)
your answers, compulsorily draw diagonal cross lines on the remaining blank pages f identification, appeal to evaluator and /or equations written eg, $42+8=50$, will be		0.	What is o'll bell? Explain the selledule management mechanism of o'l bext.	(TO Marks)
orily to e			OR	
ulsc	6	a.	Explain SCADA protocol translation and SCADA Transport over LNs with MAP-	·T.
app				(10 Marks)
		b.	Explain in detail COAP message format.	(06 Marks)
vers		C.	Compare COAP and MQTT.	(04 Marks)
your answers, f identificatio			Module-4	
ur a den	7		Explain distributed Hadoop cluster and explain how to write a file to HDFS.	(10 Marks)
	/	a.	Explain in detail the Edge Analytics core functions with diagram.	(10 Marks)
On completing Any revealing		U.	Explain in detail the Edge Analytics core functions with diagram.	(10 Marks)
pple eali			OR	
rev	8	a.	Explain the following protocols:	
On (i) Modbus ii) DNP3 iii) ICCP iv) OPC v) IEC	(10 Marks)
1. 0 2. A		b.	Explain the logical framework based on the Purdue model for control hierarchy.	(10 Marks)
Š			Module-5	
ant	9	a.	What is Arduino? Briefly explain the Arduino Uno Board.	(10 Marks)
Important Note: 1. On completing 2. Any revealing o		b.	Describe briefly the System on Chip (SoC).	(05 Marks)
Iml		C.	Write a python program on Raspberry Pi to blink an LED.	(05 Marks)
			OR	-
	10	a.	Explain smart city security architecture.	(10 Marks)
	_ 0	b.	Explain the following use cases (i) Connected Street Lighting (ii) Smart Parking.	
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