Reg. No.															

B.Tech. DEGREE EXAMINATION, JUNE 2023
Sixth Semester

18EIE306T – INDUSTRIAL INTERNET OF THINGS
(For the candidates admitted from the academic year 2018-2019 to 2021-2022)

Note:
(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours | Max. Marks: 100

	Marks	BL	CO	PO
PART – A (20 × 1 = 20 Marks) Answer **ALL** Questions				
1. Choose the standard length of MAC address. (A) 16 bits (B) 32 bits (C) 48 bits (D) 64 bits	1	1	1	1
2. How many number of elements available in open IoT architecture. (A) 4 (B) 5 (C) 6 (D) 7	1	1	1	1
3. Data rates of LoRa ranges from (A) 0.3 to 50 kbps (B) 0.1 to 20 kbps (C) 3 to 150 kbps (D) 30 to 120 kbps	1	1	1	1
4. Select the band in which 802.15.4 does not operate (A) 808 MHz (B) 1.9 GHz (C) 915 MHz (D) 2.4 GHz	1	1	1	1
5. An IoT network is a collection of _____devices. (A) Signal (B) M2M (C) Interconnected (D) Network to network	1	1	2	1
6. _____is an example of smart grid device in IoT (A) Mobile phone (B) Television (C) Smart speaker (D) Smart meter	1	1	2	1
7. _____is not a data link layer technology. (A) WiFi (B) UART (C) HTTP (D) Bluetooth	1	1	2	1
8. TCP/IP model does not have _____layer (A) Session (B) Transport (C) Application (D) Network	1	1	2	1
9. The second level in automation pyramid is _____ (A) ERP (B) Manufacturing execution (C) Process level control (D) Production level	1	1	3	1

10.	Flipkart looks at robotics to improve efficiency in _____ (A) Production (B) Delivery (C) Warehouse (D) Store	1	1	3	1
11.	Identify the one that is not present in layer 1 and 2 of ISA95 (A) Batch control (B) Operation control (C) Discrete control (D) Continuous control	1	1	3	1
12.	MOD Bus can broadcast upto _____slaves simultaneously in a bus topology. (A) 274 (B) 247 (C) 294 (D) 249	1	1	3	1
13.	_____is not a component of SCADA system. (A) Database server (B) I/O system (C) Sparger control (D) PLC controller	1	1	4	1
14.	Pulse type communication does not have real time properties due to its _____nature. (A) Screening (B) Accumulating (C) Dispersive (D) Bulk	1	1	4	1
15.	_____property is not listed under service oriented architecture. (A) Loosely coupled (B) Late binding (C) Autonomy (D) Data encryption	1	1	4	1
16.	IPV6 was developed in _____ (A) 1974 (B) 1954 (C) 1998 (D) 1988	1	1	4	1
17.	IPV4 has a bit length of _____ (A) 8 (B) 16 (C) 32 (D) 128	1	1	4	1
18.	_____layer is used for wireless connection in IoT. (A) Application (B) Network (C) Data link (D) Transport	1	1	5	1
19.	The life cycle of component based automation system is _____ (A) Component (B) Element (C) Device (D) Time	1	1	5	1
20.	_____is not an actuator in IoT (A) Stepper motor (B) Fan (C) LED (D) Arduino	1	1	5	1

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	List the IoT enabling technologies.	4	1	1	1
22.	State the 3 V's of big data analytics.	4	2	1	1
23.	Summarize on 6 Low PAN.	4	2	2	1
24.	List different types of Ethernet standards.	4	2	2	1
25.	Give the components of MQTT.	4	1	3	1
26.	List the benefits of IIoT.	4	1	4	1
27.	Distinguish between PLC and SCADA.	4	2	5	1

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Contrast between static and dynamic IP address assignments.	12	2	1	1
	(OR)				
b.	Illustrate the reference model of IoT gateway and explain.	12	2	1	1
29. a.	Explain about any two IoT protocols in detail.	12	1	2	1
	(OR)				
b.	Describe about open source platforms.	12	1	2	1
30. a.	Compare between HART, ZWAVE and field bus.	12	3	3	1
	(OR)				
b.	Explain about web application framework.	12	1	3	1
31. a.	Discuss the challenges in IIoT deployment.	12	2	4	1
	(OR)				
b.	Explain the architecture and design methodology for developing IOT application using networked control system.	12	3	4	1
32. a.	Explain about security features of IIoT in process plants and automation.	12	2	5	1
	(OR)				
b.	Describe IIoT in facility management systems.	12	2	5	1

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