Reg. No.														

B.Tech. DEGREE EXAMINATION, NOVEMBER 2022
Sixth and Seventh Semester

18ECE385T – IOT IN PROCESS INSTRUMENTATION AND AUTOMATION
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

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** should be answered in answer booklet.

Time: 2½ Hours Max. Marks: 75

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
1.	State the number of layers in open IoT architecture (A) 4 (B) 5 (C) 6 (D) 7	1	1	1	1
2.	Identify the following in which IoT device is associated with data (A) Internet (B) Cloud (C) Automata (D) Network	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) 868 MHz (B) 915 MHz (C) 2.4 GHz (D) 1.9 GHz	1	1	1	1
5.	Choose the network topology that has a central hub or switch (A) Mesh (B) Token ring (C) Star (D) Token bus	1	1	1	1
6.	_____layer is used to link the network support layer and user support layer. (A) Session (B) Data link (C) Transport (D) Network	1	1	2	1
7.	Identify the layer that is responsible for process to process delivery in a general network model. (A) Network (B) Transport (C) Session (D) Data link	1	1	2	1
8.	Recall the address that is used to identify a process on a host by transport layer (A) Physical address (B) Logical address (C) Port address (D) Specific address	1	1	2	1

9. Show the layer that provides service to users — 1 1 2 1
   (A) Application (B) Session
   (C) Presentation (D) Physical

10. Recall the real example of a smart grid device in IoT — 1 1 2 1
   (A) Mobile phone (B) Smart meter
   (C) Smart speaker (D) Television

11. MOD bus can broadcast upto _____ slaves simultaneously in a bus topology. — 1 1 3 1
   (A) 274 (B) 247
   (C) 294 (D) 264

12. MQTT is a _____protocol. — 1 1 3 1
   (A) M2M (B) IOT
   (C) Machine thing (D) A and B

13. Name the company to first utilize a robotic system in its production line — 1 1 3 1
   (A) Ford motor (B) Volkswagen
   (C) General motor (D) Toyota

14. Supervisory control and data acquisition is a _____ — 1 1 3 1
   (A) Business management (B) Controller for machines
   (C) Computer system to collect information (D) A device

15. MDMU stands for _____ — 1 1 3 1
   (A) Meter data management unit (B) Metric data measurement unit
   (C) Metric data monitoring unit (D) Meter data monitoring unit

16. Pulse time communication does not have real time properties due to its _____nature. — 1 1 4 1
   (A) Screening (B) Accumulating
   (C) Dispersive (D) Bulk

17. Name the virus that hampered automation system with sophisticated ways — 1 1 4 1
   (A) NIMBA (B) STOXNET
   (C) PLOGX (D) MYDOOM

18. Interpret the property that is not listed under service oriented architecture — 1 2 4 1
   (A) Loosely coupled (B) Late binding
   (C) Autonomy (D) Data encryption

19. IPV6 was developed in _____ — 1 1 4 1
   (A) 1954 (B) 1974
   (C) 1988 (D) 1998

20. Show the exact bit length of IPV 4 — 1 1 4 1
   (A) 8 bits (B) 16 bits
   (C) 32 bits (D) 128 bits

21. Identify the key feature in second generation Hadoop — 1 1 5 1
   (A) Veracity (B) Cloud
   (C) Base (D) Yarn

22. Choose the appropriate language of IoT system — 1 1 5 1
   (A) C++ (B) Python
   (C) PHD (D) HTML

23. API enables system portability between _____ — 1 1 5 1
   (A) System (B) Device
   (C) Network (D) Service

24. The term IoT was coined by — 1 1 5 1
   (A) IBM (B) Ross ihaka
   (C) Guido van rossum (D) Xevin hashton

25. Identify the operating range of 2 wave — 1 1 5 1
   (A) 908.42 (B) 250.07
   (C) 1080 (D) 1024.07

PART – B (5 × 10 = 50 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
26. a.	Illustrate IoT network models.	10	3	1	1
	(OR)				
b.	Examine any 5 application areas of IoT in detail.	10	3	1	1
27. a.	Illustrate and explain the IoT business model by ITO.	10	3	2	1
	(OR)				
b.	Show the four concepts of IIOT.	10	3	2	1
28. a.	Examine the prerequisites of IIOT device low powered WAN optimized technology.	10	3	3	1
	(OR)				
b.	Outline the design principles of industry 4.0.	10	3	3	1
29. a.	Infer between IoT and SOS of next generation automation system.	10	3	4	1
	(OR)				
b.	Outline on the local cloud properties.	10	4	4	1
30. a.	Outline the design guidelines for component based engineering tools.	10	3	5	1
	(OR)				
b.	Discuss about engineering tool interoperability.	10	3	5	1

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