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B.Tech. DEGREE EXAMINATION, JUNE 2023

Sixth Semester

18EEE331T - INTERNET OF THINGS

(For the candidates admitted during 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 40 minutes.

ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours **Max. Marks: 100**

Part - A (20 × 1 Marks = 20 Marks)

Answer **All** Questions

		Marks	BL	CO
1.	The following one is not the characteristics of IoT (A) Self-configuring (B) Dynamic & self-adapting (C) Unique identity (D) Standalone infrastructure	1	1	1
2.	The 'Things' in IoT is usually refers to (A) IoT devices (B) Controller services (C) Resources (D) App	1	1	1
3.	LR-WPAN stands for (A) Low –rate wireless personal area network (B) Low-reluctant wireless personal area network (C) Low-resistance wired personal area network (D) Layer-reduced wireless personal area network	1	1	1
4.	MQTT is stands for (A) Mainframe Queue Telemetry Transport (B) Message Queue Telemetry Transport (C) Metadata Queue telemetry transport (D) Machine Queue Telecommunication Transport	1	1	1
5.	Key components of M2M System are (A) Smart City (B) Set of rules (C) Data Distribution serviced (D) Sensors and Wi-Fi	1	1	2
6.	The internet of things will run on several communication standards. Which of these is not a standard protocol? (A) AllSean (B) Tyrell (C) Z-wave (D) Zigbee	1	1	2
7.	Who will use their own IOT business models? (A) PaaS (B) IaaS (C) SaaS (D) Service Provider	1	1	2
8.	Security based relation is provided by which layer? (A) Application layer (B) Transport layer (C) Session layer (D) Network layer	1	1	2
9.	The number of used bits in PSW register is (A) 5 (B) 8 (C) 6 (D) 7	1	1	3

10.	How many Analog pins are present in Arduino Uno? (A) 4 (B) 5 (C) 6 (D) 12	1	1	3
11.	ATmega328 uses_____ of flash memory for storing the code. (A) 24 KB (B) 30 KB (C) 32 KB (D) 16 KB	1	1	3
12.	Arduino uses _____ architecture to store the program and data. (A) Von-Neuman (B) Harvard (C) RISC (D) CISC	1	1	3
13.	What does RFID stand for? (A) Radio frequency issue date (B) Rear field identification (C) Real far identification (D) Radio frequency identification	1	1	4
14.	Among the following applications, in which, an active RFID tag would be used? (A) Inventory tracking (B) Vehicle movement tracking (C) Theft prevention (D) Secure opening of doors	1	1	4
15.	The wireless networking standard useful for establishing small personal area networks is (A) Bluetooth Technology (B) Communication Technology (C) Ethernet Technology (D) Wired Technology	1	1	4
16.	Which protocol belongs to data link layer? (A) CoAP (B) XMPP (C) MQTT (D) Z-WAVE	1	1	4
17.	The purpose and requirements of System management in IoT design is to (A) Provide remote monitoring (B) Provide control function (C) Provide remote monitoring and control function (D) Provide management information	1	1	5
18.	The data analysis requirement in the IoT design is the system should perform (A) Local analysis of the data (B) Global analysis of the data (C) Local memory analysis (D) System data analysis	1	1	5
19.	Process model specification step involved in IoT design methodology is to (A) Define the model (B) Define the use cases (C) Define the specifications (D) Define the methodology	1	2	5
20.	Functional view specification steps involved in IoT design methodology is to (A) Map IoT level to specifications (B) Map IoT level to functional groups (C) Define functions of IoT design (D) Define specification of IoT design	1	2	5

Part - B (5 × 4 Marks = 20 Marks)
Answer **any 5** Questions

		Marks	BL	CO
21.	Explain the architecture of IoT and design process.	4	2	1
22.	Draw the block diagram of an M2M gateway and describe its functions.	4	2	2
23.	Discuss about the Network operator Requirements.	4	2	2
24.	Explain information model specification in IoT platform design methodology.	4	2	3
25.	Discuss about communication protocols for IoT.	4	1	3
26.	Explain the general IoT Design modeling with necessary diagrams.	4	2	5
27.	Explain IoT design based indoor air quality monitoring.	4	2	5

Part - C (5 × 12 Marks = 60 Marks)
Answer **All** Questions

		Marks	BL	CO
28.	a. Explain IoT level 4, level 5 and level 6 and deployment templates. (OR) b. Explain IoT enabling technologies in detail.	12	2	1
29.	a. Explain the M2M Service Platform and SNMP with suitable block diagrams. (OR) b. Draw the architectures of SDN and NFV and discuss the functions of its key elements.	12	2	2
30.	a. Explain the IoT platform design methodology with a case study. (OR) b. Explain Python Data Types and give examples.	12	2	3
31.	a. Construct the I2C and SPI interfaces for data transfer in Raspberry Pi and explain with neat diagrams. (OR) b. Write short notes on the IoT devices (i) pcDuino and (ii) BeagleBone Black	12	2	4
32.	a. Explain the IoT Design modeling of Home Automation for smart lighting and smart appliances with necessary diagrams. (OR) b. Draw the block diagram, Process flow, domain model and IoT level for any one IoT application and explain.	12	3	5

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