b.	With a neat diagram write a program to make an LED to blink using Raspberry Pi board and Node.js.	12	3	4	4
32. a.	Explain the role of user experience in smart space design.	12	4	5	3
	(OR)				
b.	Elaborate on the future trends in smart space design with appropriate examples.	12	4	5	3

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2023

Sixth Semester

18CSE309T – DESIGN PRINCIPLE OF SMART SPACE MANAGEMENT

(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 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
1.	Which of the following does not denote the function in a space? (A) Working (B) Structure (C) Studying (D) Playing	1	1	1	2
2.	The building typology of 'offices' come under the category of (A) Hospitality (B) Commercial (C) Residential (D) Hazardous	1	2	1	3
3.	A _____ tends to convert physical attribute to an electrical signal. (A) Actuator (B) Sensor (C) Compiler (D) Motors	1	1	1	1
4.	Who coined the term 'Internet of things'? (A) Kevin Aston (B) John Wright (C) Edward Jameson (D) George Garton	1	2	1	2
5.	Which service permits the changes to IoT services (A) Update (B) Registered service status (C) Enable from suspension (D) Enable	1	2	2	1
6.	Mod bus communication period was developed in the year _____. (A) 1970 (B) 1975 (C) 1980 (D) 1979	1	2	2	3
7.	The role of cloud in smart grid architecture of IoT is to (A) Secure (B) Manage data (C) Collect data (D) Store data	1	1	3	9
8.	Mod bus is a _____ type of communication protocol. (A) Parallel (B) Serial (C) Hybrid (D) Serial and parallel	1	2	2	3
9.	Identify the open source stack for gateways and the edge (A) Eclipse Kapua (B) Red mat (C) Inter cloud (D) Eclipse Kura	1	3	4	3

10.	Which of the following is used to capture the data from physical world in IoT devices? (A) Sensors (B) Actuators (C) Microprocessor (D) Micro controllers	1	1	1	1
11.	What is the internet of things? (A) A system that connects all types of devices to the internet (B) A tool for managing computers (C) A platform for online store (D) Technology for the management	1	1	3	2
12.	Identify the smart element from the following (A) Switchable privacy glass (B) Doors (C) Windows (D) Partition	1	2	3	3
13.	Expand the term 'LED' (A) Light emitting diode (B) Lasting emitting diode (C) Light efficient diode (D) Light emitting diagram	1	1	3	2
14.	Automation in signage can be effectively used for (A) Parking (B) Classroom (C) Living room (D) Work cubicle	1	2	3	2
15.	Which of the following is a device that detects or measures a physical property and records? (A) Sensor (B) Transistor (C) Resistor (D) Capacitor	1	1	2	5
16.	'ITS' stands for which of the following (A) Internet Travel Services (B) Internet Transportation Security (C) Intelligent Transportation Security (D) Intelligent Transportation Security	1	2	5	2
17.	Expand 'EQ' (A) Emotional quotient (B) Expressive quotient (C) End quotient (D) Effective quotient	1	1	5	2
18.	Select the smart intervention for a classroom. (A) Projector (B) Chalk board (C) Marker board (D) Pin up board	1	1	5	3
19.	The process design teams used to create products that provide meaningful and relevant experiences to users is (A) User experience (B) Product benefit (C) Economic benefit (D) Material efficiency	1	2	5	3
20.	Security in smart names is not controlled by (A) Video surveillance (B) Thermostat (C) Smart locks (D) Smart alarms	1	2	5	2

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	List the applications of smart space management in educational sector.	4	2	1	3
22.	State the difference between COAP and MQTT.	4	2	2	2
23.	Write down the various operational states of transceiver in wireless sensor nodes.	4	2	1	2
24.	List the advantages of smart signages.	4	2	3	3
25.	Write a smart note on interrupts in Arduino.	4	3	4	2
26.	List out the advantages of IoT based on industrial application.	4	2		2
27.	What are the factors to be considered for the design of smart home automation?	4	3	5	3

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Explain the following for an office space		4	1	3
	(i) Users of office	4			
	(ii) Function and activity of office space	4			
	(iii) Spatial requirement of an office space	4			
	(OR)				
b.i.	Illustrate the functional model of IoT.	6	4	1	2
ii.	Sketch the IoT reference architecture.	6	4	1	2
29. a.	Demonstrate the method used to increase the radio systems range in SCADA communication.	12	3	2	1
	(OR)				
b.	List the different wireless sensor network protocol and discuss in detail.	12	3	2	1
30. a.	Explain the applications of smart concepts in lighting design.	12	4	3	3
	(OR)				
b.	Elaborate on the need and significance of smart spaces.	12	4	3	3
31. a.i.	Choose the right function in python, so as to carry out the number to string and to replace one string to another.	6	4	4	2
ii.	Create a list with five items in python. Use the code to access the list and add new entry in different ways.	6	4	4	2
	(OR)				