27.11.23 FN (23)

Reg. No.															

B.Tech. DEGREE EXAMINATION, NOVEMBER 2023

Sixth Semester

18CSE309T – DESIGN PRINCIPLES OF SMART SPACE MANAGEMENT

(For the candidates admitted from the academic year 2020-2021 & 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. Identify the indoor space from the following (A) Park (B) Beach (C) Amphitheatre (D) Classroom	1	2	1	1
2. Shopping malls come under the category of (A) Residential (B) Commercial (C) Industrial (D) Hazardous	1	2	1	1
3. A _____ tends to convert electrical signal to physical action. (A) Actuator (B) Compiler (C) Sensor (D) Motors	1	1	1	1
4. Which service permits the changes to the IoT services? (A) Enable from suspension (B) Update (C) Registered service status (D) Enable	1	2	1	1
5. The role of cloud in smart grid architecture of IoT is (A) Security (B) Manage data (C) Data collection (D) Store data	1	2	2	1
6. What is the range of Z-wave? (A) 30 to 100 m (B) 300 to 1000 m (C) 100 to 1000 m (D) Only 10 m	1	1	2	1
7. Which one of the following protocol is light weight? (A) COAP (B) MQTT (C) HTTP (D) IP	1	2	2	1
8. Which layer is used for wireless connection in IoT devices? (A) Application layer (B) Network layer (C) Transport layer (D) Data link layer	1	2	2	1
9. Which of the following does note denote the function in a space? (A) Working (B) Structure (C) Studying (D) Playing	1	1	3	1

10.	The term IoT was coined in (A) 1970 (B) 1999 (C) 2023 (D) 2010	1	1	1	1
11.	Expand LED. (A) Light emitting diode (B) Lasting emitting diode (C) Light efficient diode (D) Light emitting diagram	1	1	3	1
12.	Automation in a space gives (A) Time saving only (B) Space saving only (C) Labour saving only (D) Time, space and labour saving	1	2	3	3
13.	A program written with the IDE for Aurdino is called (A) IDE score (B) Cryptography (C) Source code (D) Sketch	1	2	4	1
14.	_____ is a device that detects or measures a physical property and records it (A) Sensor (B) Transistor (C) Resistor (D) Capacitor	1	1	4	1
15.	Which of the following function convert a string to a real number in python (A) int(k) (B) char(y) (C) float(x) (D) reel(x)	1	2	4	1
16.	How many 16 bit general purpose registers are there in ATMEGA 328P? (A) 2 (B) 3 (C) 4 (D) 1	1	1	4	1
17.	Expand IQ. (A) Interactive quotient (B) Implementation quotient (C) Infrastructure quotient (D) Intelligence quotient	1	1	5	1
18.	Smart home automation lighting system can be operated (A) Indoors only (B) Outdoors only (C) From any location (D) Around 500m proximity	1	2	5	3
19.	The study of human relations and behaviour within the context of the built and natural environment is (A) Psychology of space (B) Sociology (C) Technology of space (D) Philosophy of space	1	1	3	1
20.	Smart thermostat automation is used to regulate (A) Light (B) Security (C) Sound (D) Temperature	1	1	5	3

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Write the function and activity of office space.	4	2	3	4

22.	Write about the traffic eaves dropping.	4	2	2	1
23.	Illustrate the remote terminal unit of SCADA system.	4	3	2	1
24.	State any two design solutions of smart home.	4	3	3	4
25.	List two advantages of smart signages in space.	4	2	3	1
26.	Give the salient features of Raspberry Pi.	4	2	4	1
27.	Mention one example for user experience in spatial design.	4	2	5	3

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Explain the characteristics of spatial design aspects.	12	4	3	1
	(OR)				
b.	Elaborate the applications and challenges of IoT.	12	3	1	1
29. a.	Explain in detail about BLE with neat labeled framework.	12	3	2	1
	(OR)				
b.i.	Discuss on the benefits of cloud computing.	6	2	2	1
ii.	Summarize the challenges of cloud computing.	6	2	2	1
30. a.	Elaborate the applications of smart concepts in lighting design.	12	3	3	3
	(OR)				
b.	Explain the parameters considered for the design of smart spaces.	12	3	3	3
31. a.	Elaborate the types of interrupts and its features in detail of the ATMega 328P Aurdino.	12	4	4	1
	(OR)				
b.	Give the python code to measure temperature using DS18B20 digital temperature sensor with Raspberry Pi. Draw the interfacing diagram and explain.	12	3	4	3
32. a.	Consider an example of office space and give your smart solutions for space.	12	5	5	3
	(OR)				
b.	Explain IQ, EQ and SQ with an example.	12	5	5	1

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