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23CMU523BN

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)
Branch - **COMPUTER SCIENCE**
MAJOR ELECTIVE COURSE – I : INTERNET OF THINGS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which layer of cloud is used in IoT as a platform service? a) IaaS b) PaaS c) SaaS d) DaaS	K1	CO1
	2	Name the Microsoft service designed for IoT device management. a) Google IoT Core b) AWS Greengrass c) Azure IoT Hub d) IBM Watson IoT	K1	CO2
2	3	Name the protocol used for low-power IoT wireless communication. a) Wi-Fi b) IPv6 c) ZigBee d) HTTP	K1	CO1
	4	Recall the protocol used for device discovery over short-range communication. a) Bluetooth b) HTTP c) MQTT d) CoAP	K2	CO2
3	5	Which sensor parameter indicates sensitivity to physical input changes? a) Range b) Resolution c) Accuracy d) Linearity	K1	CO1
	6	Define the board used for running Python programs in IoT applications. a) Raspberry Pi b) Arduino UNO c) Intel NUC d) ESP8266	K1	CO1
4	7	Extend the idea of LPWAN by selecting the correct topology type it supports. a) Star b) Mesh c) Tree d) Ring	K2	CO1
	8	Which wireless technology is commonly associated with ultra-narrowband communication in IoT? a) Wi-Fi b) ZigBee c) Sigfox d) Bluetooth	K2	CO1
5	9	Identify the main benefit of Big Data Analytics in IoT applications. a) Real-time insights from data b) Only stores historical records c) Replaces all cloud infrastructure d) Restricts device communication	K2	CO1
	10	Explain which technology enables remote monitoring in smart healthcare systems. a) Cloud computing and IoT sensors b) Manual patient visits c) Desktop-only applications d) Local paper-based records	K2	CO1

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Analyse the important aspects of Device-to-Cloud (D2C) Integration.	K3	CO1
		(OR)		
	11.b.	Show the features of IoT Introduction.		
2	12.a.	Explain the Layered Architecture for IoT.	K2	CO2
		(OR)		
	12.b.	Compare prominent IoT service discovery protocols		
3	13.a.	Construct an Arduino-based IoT device to monitor air quality using multiple chemical sensors.	K4	CO3
		(OR)		
	13.b.	Utilize Raspberry Pi with Python programming to interface multiple sensors and log data for analysis.		
4	14.a.	Apply the concept of 5G architecture to support IoT ecosystems with an explanation of its components.	K4	CO3
		(OR)		
	14.b.	Construct a comparison of Sigfox, Weightless, and NWave technologies for IoT applications.		
5	15.a.	Analyze the principal steps toward knowledge discovery in IoT data analytics.	K3	CO4
		(OR)		
	15.b.	Examine the challenges in implementing IoT in healthcare and classify them according to technology, security, and regulatory aspects.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss the brewing and blossoming trends in the IT space.	K4	CO1
2	17	Apply knowledge of IoT Infrastructure Protocols to design a small smart home network.	K4	CO4
3	18	Plan and implement an end-to-end IoT system combining Arduino and Raspberry Pi boards for simple application.	K4	CO3
4	19	Analyze the cloud service ecosystem for IoT and examine its role in developing hybrid cloud environments.	K4	CO4
5	20	Evaluate the strategic importance of real-time analytics for smart healthcare systems and recommend measures to optimize patient monitoring and clinical decision-making.	K4	CO5

Z-Z-Z END