Reg. No.															

Question Paper Code	12764

M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

M.E. - Embedded Systems Technologies

20PESPC204 – INTERNET OF THINGS

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	List some of the common communication protocols used in WSNs.	2	K1	CO1
2.	What is cloud computing?	2	K1	CO1
3.	What are the advantages of using IPv6 in low-power wireless networks?	2	K1	CO2
4.	Summarize the key characteristics of CoAP that make it suitable for use in constrained environments.	2	K2	CO2
5.	What does NFC stand for?	2	K1	CO3
6.	Name two frequency bands commonly used by WiFi networks.	2	K1	CO3
7.	What does dependability refer to in the context of systems and services?	2	K1	CO4
8.	Explain the importance big data analytics in decision making.	2	K2	CO4
9.	Name two key features of a smart grid infrastructure.	2	K1	CO5
10.	Name two examples of smart city initiatives implemented in real-world cities.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain the concept of virtualization in cloud computing.	13	K2	CO1
		OR			
	b)	Explain the role of the MAC layer in WSN protocols such as IEEE 802.15.4.	13	K2	CO1
12.	a)	Demonstrate the interaction between the sensing and processing components in an IoT node.	13	K2	CO2
		OR			
	b)	Show how the RPL operates to establish and maintain routes in low power and lossy networks.	13	K2	CO2
13.	a)	Discuss the challenges and opportunities in integrating Bluetooth technology with other wireless protocols in heterogeneous IoT environments.	13	K2	CO3

OR

b) Explain the significance of LTE technology in the evolution of mobile communication networks. *13 K2 CO3*

14. a) Discuss the challenges in implementing and deploying 6LoWPAN networks, including addressing schemes, routing protocols, and interoperability issues. *13 K2 CO4*

OR

b) Evaluate the security implications of UWB technology and the measures to mitigate risks in IoT deployments. *13 K2 CO4*

15. a) Discuss the goals, objectives, and strategies employed in the project to protect natural habitats and biodiversity. *13 K2 CO5*

OR

b) Discuss how the productivity application improves efficiency, organization, and collaboration in a professional environment. *13 K2 CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Develop the strategies to address the barriers to electric vehicle charging infrastructure deployment and promote the adoption of electric vehicles. *15 K3 CO6*

OR

b) Identify the challenges and opportunities associated with scaling up the adoption of the innovation or technology in other regions or countries. *15 K3 CO6*