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Question Paper Code	12684
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M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

M.E. - Embedded Systems Technologies

20PESPC202 - PERVASIVE DEVICES AND TECHNOLOGY

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Examine the use of Sensor node.	2	K2	CO1
2. Differentiate WSN and Adhoc Networks.	2	K2	CO1
3. Outline the challenges related to resource in WSN.	2	K2	CO2
4. Enumerate the various operating system design issue in Sensor Network.	2	K2	CO2
5. What is meant by Wireless Backbone Network?	2	K1	CO4
6. Discuss the use of Wireless Access Technology.	2	K2	CO4
7. What is contention based protocol and why it is important in sensor network?	2	K1	CO5
8. List out the advantages of using ZIGBEE communication.	2	K1	CO5
9. What is RF WPAN?	2	K1	CO6
10. Summarize the application of Bluetooth technology.	2	K2	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Describe in detail about the Challenges for Wireless Sensor Networks.	13	K2	CO1
OR			
b) Analyze about physical layer and transceiver design consideration in Wireless Sensor Network.	13	K2	CO1
12. a) Illustrate and enumerate the Hardware component in Single-Node sensor network architecture.	13	K2	CO2
OR			
b) Categorize and analyze the various Optimization goals and figures of merit in WSN.	13	K2	CO2
13. a) Demonstrate in detail about the architecture and various services of IEEE 802.11 protocol.	13	K2	CO4

OR

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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b) Analyze the architecture and functions of HiperLAN-1 and Hiper LAN-2. 13 K2 CO4

14. a) Discuss the mechanism of S-MAC in detail. Also explain the concept of S-MAC fragmentation. 13 K2 CO5

OR

b) i) Explain the Network Architecture and Types of nodes in IEEE 802.15.4 MAC protocol. 8 K2 CO5

ii) Describe about Low Energy Adaptive Clustering Hierarchy in detail. 5 K2 CO5

15. a) Analyze in detail about the Classification of Wireless Networking of Devices. 13 K2 CO6

OR

b) Explain the architecture of Bluetooth network and also outline the functions of Bluetooth protocol stack. 13 K2 CO6

PART - C (1 × 15 = 15 Marks)

16. a) What is the need for Gateways? Explain the gateway concepts in detail. 15 K2 CO3

OR

b) Describe the Design Principles for WSN in detail. 15 K2 CO3