17 DEC 2022

B.E./B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022
Seventh Semester
Electronics and Communication Engineering
EC8702 – AD HOC AND WIRELESS SENSOR NETWORKS
(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART-A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	List the applications of ad hoc networks.	2,K1, CO1
2.	Differentiate proactive and reactive routing protocols with an example.	2,K2, CO1
3.	Identify the use of RSSI in secondary battery requirement.	2,K2, CO2
4.	Elaborate the two aspects of power supply of sensor nodes.	2,K2, CO2
5.	Mention the functions of a STEM protocol.	2,K2, CO3
6.	Explain the procedure to transmit the data from a coordinator to a device using IEEE 802.15.4 MAC protocol.	2,K2, CO3
7.	Categorize the various types of attacks in a wireless sensor network.	2,K2, CO4
8.	Discriminate the solution to reduce repudiation attack in application layer.	2,K2, CO4
9.	Classify the components of nesC based on the implementation level.	2,K2, CO5
10.	Mention the advantage of ns-2.	2,K2, CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Examine the various issues that affect the performance of ad hoc wireless sensor networks. *13, K2,CO1*

OR

b) Inspect about the various types of wireless network along with the comparison of wired and wireless network. *13,K2,CO1*

12. a) (i) Categorize the sensor network scenario with neat diagrams. *6,K2,CO2*
    (ii) Explain how the mobility is considered in WSN? *7,K2,CO2*

OR

b) Examine the non-radio frequency communication available for Communication in a wireless sensor network. *13,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11475**

13. a) Examine the working principle of CSMA protocol used in 802.15.4 for medium access in WSN with the help of State diagram.   13,K2,CO3

OR

b) Examine the structure of super frame along with the explanation to perform data transmission in between the nodes.   13,K2,CO3

14. a) Demonstrate the layer wise attacks in wireless sensor network and explain its impact on networks.   13,K2,CO4

OR

b) Examine the impact of the following security threats in WSN
   (i) Black hole attack   6,K2,CO4
   (ii) Transport layer attacks   7,K2,CO4

15. a) Analyze the characteristics and components of node-level simulator with necessary functions.   13,K2,CO5

OR

b) Determine the role of Collaboration Groups and its abstractions in the design of state-centric programming tools.   13,K2,CO5

PART C (1 × 15 = 15 Marks)

16. a) (i) List the drawbacks of traditional programming technologies in sensor network design.   7,K2,CO6
   (ii) Examine the challenges of sensor network programming.   8,K2,CO6

OR

b) Explain how the TinyOS operating system supports resource constrained hardware platforms. Discuss in detail.   15,K2,CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11475**

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