Reg. No. : | | | | | | | | | | |

Question Paper Code: 49406

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Electronics and Communication Engineering

14UEC906 -WIRELESS SENSOR NETWORKS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. The greatest advantage of Sensor network is its CO1- R

   (a) Scalability (b) Reliability (c) Robustness (d) All the above

2. A Sensor network is designed to perform a _____ high level information processing tasks CO1- R

   (a) detection (b) tracking (c) classification (d) All the above

3. In the design of Wireless sensor network, which device is suitable for testing CO2- R

   (a) Microcontroller (b) DSP (c) FPGA (d) ASIC

4. The main goal of the _____is to reduce energy waste caused by idle listening,Collisions,Overhearing and control overhead CO2- R

   (a) S-MAC protocol (b) IEEE 802.11 (c) IEEE 802.15.4 (d) None of the above

5. Examples of data attributes include _____ CO3- R

   (a) node's location (b) node's type sensors

   (c) certain range of values in a certain type of sensed data (d) all the above

6. A_____ sensing system is inherently more robust against individual sensor node or link failures, because of redundancy in the network CO3 -R

   (a) centralized (b) decentralized (c) feedback based TCP (d) SDH

7. _____ technique is used to estimate the RF signal strength at the receiver CO4- R

(a) RSS (b) RBS (c) RSB (d)None of the above

8. _____is an interdisciplinary research area that draws on contributions from signal processing, networking and protocols, databases and information management, distributed algorithms, and embedded systems and architecture CO4- R

(a) wireless networks (b) sensor networks

(c) BGP process (d) CCIP

9. Example of system –on chip node is ---------- CO5 -R

(a) PDA (b) PASTA (c) UCLA (d) Win CE

10. Among the following which is the common types of sensors for tracking. CO5- R

(a) acoustic sensors (b) DOA sensors

(c) a& b both (d) PRMA sensors

PART – B (5 x 2= 10Marks)

11. Compare the features of cellular networks and ad hoc networks. CO1 -R

12. Discuss the design issues of routing protocols in Ad hoc networks. CO2 -R

13. Describe the sensor node architecture with appropriate figure. CO3- R

14. What are the advantages of clustering? CO4- R

15. Write short notes on system on –chip nodes. CO5 -R

PART – C (5 x 16= 80Marks)

16. (a) Explain the issues in designing the MAC protocols in ad hoc networks and describe the classification of MAC protocols. CO1- U (16)

Or

(b) (i) Discuss the characteristic requirements of WSN CO1- U (8)

(ii) Explain the innovative mechanisms to realize the characteristic requirements of WSN. CO1- U (8)

17. (a) List the classification of routing protocols in ad hoc networks. Explain any two in detail. CO2 -U (16)

Or

(b) Write in detail about the Gateway concept in WSN. CO2- U (16)

18.	(a)	Differentiate ad hoc networks & sensor networks. Outline the features of WSN	CO3 -U	(16)
		Or		
	(b)	Write in detail about the IEEE 802.15.4 standard with suitable diagrams	CO3 -U	(16)
19.	(a)	Explain the OLSR protocol in detail. Compare it with AODV protocol.	CO4- U	(16)
		Or		
	(b)	Discuss in details any two localization and positioning algorithms	CO4- U	(16)
20.	(a)	Explain the 802.11s architecture.	CO5 -U	(16)
		Or		
	(b)	Explain the challenges for sensor network platforms	CO5 -U	(16)