

SVKM
Mithibai College (Arts, Sci & Comm)

Programme: B.Sc (Computer Science) - (CBCGS)
Year: III/Semester VI (Exam Year: 2023-2024)

Subject: WIRELESS SENSOR NETWORKS AND MOBILE COMMUNICATION
Date: 28 Mar 2024

Max Marks: 75

Time: 10:30 am - 01:00 pm (02:30 Hrs.)

FINAL EXAMINATION(2023-2024)

Instructions:

1. This question paper contains 2 pages
2. Answer to each new question to be started on a fresh page.
3. Figure in right hand side indicates full marks
4. Use of Scientific Calculator is allowed

1. (Attempt Any 3 Questions)

15

- A. What are the required mechanisms to meet characteristic requirements for WSNs? **5**
- B. Write a note on TinyOS. **5**
- C. What are basic network scenarios in Ad hoc networks and WSNs? **5**
- D. How can the applications of WSN be classified based on interaction patterns between sources and sinks? **5**

2. (Attempt Any 3 Questions)

15

- A. What are the advantages and limitations of the RBS (Receiver-Receiver Broadcast Synchronization) protocol? **5**
- B. What are the fundamental principles of naming and addressing in wireless sensor networks (WSNs)? **5**
- C. What are some advanced techniques for time synchronization in WSNs? **5**
- D. Explain the principle behind single-hop localization. **5**

3. (Attempt Any 3 Questions)

15

A. What are the objectives of WSN MAC Design?	5
B. How to S-MAC Periodic Listen and Sleep Mechanism works and how does S-MAC passes messages?	5
C. How does Low-Energy Adaptive Clustering Hierarchy technique routes in WSN?	5
D. Explain TCP Connection establishment with three way handshaking and flow control	5
4. (Attempt Any 3 Questions)	15
A. What are the advantages, disadvantages and Application of Geo Stationery Satellites?	5
B. What is spread spectrum technology? What are its advantages and disadvantages?	5
C. What is frequency planning in mobile communication?	5
D. Explain the bearer services of GSM	5
5. (Attempt Any 3 Questions)	15
A. Describe the basic hardware components typically found in a sensor node.	5
B. Compare and classify between Distributed Assignment and Content-based Addressing (Any 5 points)	5
C. What are the primary design challenges faced when developing routing protocols for Wireless Sensor Networks (WSNs)?	5
D. Explain the difference between hard handover and soft handover	5