

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2023
(Fifth Semester)

BRANCH – INFORMATION TECHNOLOGY

DISCIPLINE SPECIFIC ELECTIVE – I WIRELESS SENSOR NETWORKS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. _____ support highly distributed high-node-count applications.
(i) C4WSN (ii) C3WSN
(iii) C2WSNs (iv) C1WSN
2. _____ manages the communication functions, including routing, packet buffering and forwarding, topology maintenance, medium access control.
(i) Middleware (ii) Sensor drivers
(iii) Communication drivers (iv) Communication processors
3. In a multihop WSN, _____ must participate in forwarding data packets between the source and the destination
(i) Sensor nodes (ii) intermediate nodes
(iii) Mobile nodes (iv) Network nodes
4. _____ emphasizes the necessity of being able to query the provenance of data for certain applications.
(i) Data-centric storage (ii) Multiresolution storage
(iii) Provenance-aware data storage (iv) External storage
5. _____ is a distributed adaptive operating system designed specifically for application adaptation and energy conservation
(i) TinyOS (ii) MagnetOS
(iii) EYES OS (iv) SenOS

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a. Explain the challenges and limitations involved in WSN.
OR
b. Explain any 3 key technologies and standard elements that are relevant to sensor networks.
- 7 a. Explain various basic software subsystem of Sensors.
OR
b. Classify the major categories of strategies in MAC protocols.
- 8 a. Narrate routing challenges and design issues in wireless sensor networks.
OR
b. Describe about the factors in the design of transport protocols for WSNs.

Cont...

- 9 a. Outline the basic middleware functions for WSNs.
OR
b. Explain about Simple Network Management Protocol.
- 10 a. Discuss about Operating System design issues.
OR
b. Explain about the design factors for Wireless Sensor Networks.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a. Categorize the phases involved in the historical survey of Sensor Networks.
OR
b. Examine the various categories of WSN Applications.
- 12 a. Discuss about standardized wireless technologies.
OR
b. Analyze the performance requirements of MAC protocols.
- 13 a. Highlight about WSN congestion and loss of performance in TCP.
OR
b. Outline examples of existing transport control protocols.
- 14 a. Elucidate in detail about Existing Middleware.
OR
b. Enumerate in detail about Network Management Design Issues.
- 15 a. Discuss in detail about examples of Operating Systems.
OR
b. Discuss about performance modeling of WSNs.

Z-Z-Z END