

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Fifth Semester)

Branch – INFORMATION TECHNOLOGY

DISCIPLINE SPECIFIC ELECTIVE : 1 - WIRELESS SENSOR NETWORKS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

1. WSN stands for _____.
(i) Wireless sensor network (ii) Wired sensor network
(iii) Wired sensor node (iv) Wireless sensor node
2. Data in WSN is transmitted by _____ connectivity.
(i) Wireless (ii) Wired
(iii) Both (i) and (ii) (iv) None of these
3. WSN is built with _____.
(i) Nodes (ii) Switches
(iii) Wires (iv) Radio
4. What is the purpose of radio transceiver in WSN?
(i) Receives the data (ii) Transmits the data
(iii) Both transmits and receives the data (iv) None of these
5. A sensor node with a processing unit has _____ computational power.
(i) Limited (ii) Unlimited
(iii) Maximum (iv) 0
6. A wireless network provides immediate connection anywhere in the wireless range of its _____.
(i) bridges (ii) access points
(iii) gateways (iv) routers
7. Which one of the following is a hierarchical protocol designed to respond to sudden changes in the sensed attributes, such as temperature?
(i) LEACH (ii) TCP
(iii) TEEN (iv) Gossiping
8. In wireless sensor networks, which constraint is of paramount importance?
(i) Computing power (ii) Communications capabilities
(iii) Memory (iv) Energy consumption
9. _____ is a common technique frequently used for path discovery and information dissemination in wireless sensor networks.
(i) Routing (ii) Switching
(iii) Bridging (iv) Flooding
10. In WSN, Sensing unit is usually composed of two sub units: sensor and _____.
(i) Amplifier (ii) Processor
(iii) ADCs (iv) transceiver

Cont...

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a Narrate the history of Sensor networks, challenges and hurdles.
OR
b Explain the basic Sensor Network architectural elements.
- 12 a Describe about the Sensor node technology and Sensor Taxonomy.
OR
b Describe the Radio Technology Primer.
- 13 a Bring out the Data dissemination, gathering, Routing challenges and Design issues of Wireless sensor networks.
OR
b Describe about any three Routing strategies in Wireless Sensor networks.
- 14 a Describe about existing Middleware.
OR
b Bring out the Network management Design issues.
- 15 a Outline the Operating system design issues and basics of Performance, traffic management.
OR
b Analyze the Simple computation of the System Life span.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

- 16 a Discuss on the range of Applications in Wireless Sensor Networks.
OR
b Discover the examples of Category 1 WSN Applications.
- 17 a Examine the Campus applications in Wireless technologies.
OR
b Discuss on Sensor-MAC Case study.
- 18 a Identify the Traditional Transport Control Protocols and the Design issues.
OR
b Outline the examples of existing Transport Control Protocols and the performance.
- 19 a Discuss on the WSN Middleware principles and Middleware architecture.
OR
b Elucidate the Network Management basics, requirements, and Traditional models.
- 20 a Point out the examples of Operating systems for Wireless sensor networks
OR
b Discuss on WSN Design issues and Performance modeling of WSNs.

Z-Z-Z

END