

Aliah University

End-Semester Examination (Spring Semester) – 2023

(4th Year 8th Semester 4-yrs B.Tech)

Subject Name: Adhoc & Sensor Networks
Subject Code: CSEUGPE26

Full Marks: 80
Time: 3hrs

Part – A (Answer all questions)

5 x 2 = 10

- ✓ 1. What are the characteristic requirements of Wireless sensor network?
2. Differentiate between active and passive sensors,
- ✓ 3. How clustering is useful in WSNs?
4. What is the concept of flooding mechanism?
- ✓ 5. What is data aggregation?

Part – B (Answer any 6 questions)

6 x 5 = 30

- ✓ 1. What are the challenges and the required mechanisms of a Wireless Sensor networks?
- ✓ 2. Differentiate between MANET and WSNs?
- ✓ 3. Explain various applications of WSNs?
4. What is the role of MAC layer in WSNs? Explain various attributes of the MAC protocol.
5. Discuss the operation of B-MAC protocol for the MAC layer in WSNs.
- ✓ 6. What is the hidden terminal problem in WSNs? How to overcome from it?
7. Differentiate between contention based protocols and schedule based protocols.
- ✓ 8. Write short note on IEEE 802.15.4.

Part – C (Answer any 4 questions)

4 x 10 = 40

- ✓ 1. Draw the architecture of a sensor node and discuss various component of it. 4+ 6
2. What are the attributes of MAC protocol and what are the causes of energy consumption in MAC layer of WSNs? 2+4+4
- ✓ 3. Discuss the various factors influenced the routing protocol in WSNs. 10
4. Define flat routing in WSNs? Explain the working principle of the SPIN and DD routing protocols? 2 + 4 + 4
- ✓ 5. Why the hierarchical routing protocol is needed in WSNs? Discuss the operation of LEACH protocol in details. 2+8
6. Construct an architecture of WSNs for detecting forest fire and explain how your model is useful for this application? 10