

ANNUAL EXAMINATION

EIGHTH SEMESTER [B.TECH.] JULY-2023

Paper Code: ETEC-406

Subject: Ad Hoc and Sensor Networks

Time: 3 Hours

Maximum Marks: 75

Note: Attempt five questions in all including Q.No1 which is compulsory. Select one question from each unit.

- Q1 Attempt All:
- (a) What is an ad-hoc network? Why ad hoc networks are needed? Discuss. (4)
 - (b) What is Sensor Network Localization. (4)
 - (c) Explain goals to be achieved in transport layer protocol for ad hoc wireless networks. (5)
 - (d) List the characteristics of ideal routing protocol for ad hoc wireless network. (4)
 - (e) Define data relaying in a WSN. (4)
 - (f) What is data dissemination in a wireless sensor network? (4)

UNIT-I

- Q2 (a) Explain about the Contention-based MAC protocols with scheduling mechanism. (6.5)
- (b) Outline the design challenges in mobile adhoc networks and wireless sensor network. (6)
- Q3 (a) What are the advantages of reservation based MAC protocols over contention based MAC protocols? (6.5)
- (b) Explain the issues in designing the MAC protocols in ad hoc networks and give the classification of MAC protocols. (6)

UNIT-II

- Q4 (a) What is the need for power management in ad hoc network? Discuss the approaches for power aware routing protocol. (6)
- (b) Give classification of routing protocols in ad hoc networks. Explain any two. (6.5)
- Q5 (a) Why TCP protocols used in wired network is not suitable for wireless networks? (6.5)
- (b) What do you understand by network security requirements? Discuss the issues and challenges in secure routing of ad hoc wireless networks. (6)

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- Q7 (a) What is a wireless sensor network? Explain with diagrammatic illustration of wireless sensor network architecture. **(6.5)**
(b) Why is routing in multi-hop ad-hoc networks complicated, what are the special challenges? **(6)**

UNIT-IV

- Q8 (a) Explain about UWB radio communication systems. **(6)**
(b) What is wireless geolocation? Discuss the geolocation system architecture. **(6.5)**
- Q9 Write short note on:
(a) Geolocation standards for E-911 Services. **(6)**
(b) Vehicular sensor networks **(6.5)**
