

Code No: 137SW

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, January/February - 2023

ADHOC AND SENSOR NETWORKS

(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 75

**Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- |      |   |     |
|------|---|-----|
| 1.a) | What is Adhoc network?                        | [2] |
| b)   | Give applications of Adhoc networks.          | [3] |
| c)   | What is Multicasting?                         | [2] |
| d)   | What are the characteristics of TCP protocol? | [3] |
| e)   | Explain sensing range in WSN.                 | [2] |
| f)   | Explain Sensor-MAC protocol.                  | [3] |
| g)   | What is chain of trust?                       | [2] |
| h)   | Define Diffie-Hellman Key Agreement .         | [3] |
| i)   | What is TinyGals?                             | [2] |
| j)   | What is nesC?                                 | [3] |

**PART – B****(50 Marks)**

- |           |   |       |
|-----------|---|-------|
| 2.a)      | Explain link reversal routing and TORA.                                   |       |
| b)        | Explain proactive routing approach.                                       | [5+5] |
| <b>OR</b> |   |       |
| 3.a)      | Explain Ad Hoc On-Demand Distance Vector Protocol.                        |       |
| b)        | Explain Topology Broadcast based on Reverse Path Forwarding protocol.     | [5+5] |
| 4.a)      | Explain Geocasting.   |       |
| b)        | Explain the effects of partitions of TCP.                                 | [5+5] |
| <b>OR</b> |   |       |
| 5.a)      | Give the solutions for TCP over Adhoc.                                    |       |
| b)        | Explain Broadcast storm.  | [5+5] |
| 6.a)      | Explain Mica Mote.  |       |
| b)        | Explain MAC layer in WSN.   | [5+5] |
| <b>OR</b> |   |       |
| 7.a)      | Explain communication range in Wireless sensors.                          |       |
| b)        | Explain High level application layer support in Wireless sensor networks. | [5+5] |

- 8.a) Explain the problems affecting Secure Adhoc routing.  
b) Explain Anomaly detection issues in IDS systems. [5+5]

**OR**

- 9.a) What are the Major secure routing protocols for ad hoc networks?  
b) Explain sensor network hardware. [5+5]

10. Explain ns-2 simulator. [10]

**OR**

11. Write a short note on:  
a) TinyOS  
b) TOSSIM. [5+5]

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Used papers 2023