R13

Code No: 118AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, June - 2018
ADHOC AND SENSOR NETWORKS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) Illustrate important characteristics of a MANET. [2]
b) Justify the statement "MANETS are more prone to physical security threats than fixed cable networks". [3]
c) Define Multicasting and Geo-casting [2]
d) Specify the reason for "TCP through put is inversely proportional to the number of hops". [3]
e) How MAC protocols cope up with sensor network failures? [2]
f) Specify the need of High level Application layer support for specific applications of WSNs [3]
g) What is the role of Trusted Third Party (TTP) in authentication? [2]
h) Illustrate the three categories of Sensor Network Hardware [3]
i) Illustrate the types of nesC code. [2]
j) Specify the components in node level simulators for a WSN. [3]

PART - B

(50 Marks)

2. Specify the major differences between Topology-based routing and Position-based routing approaches with suitable example routing protocol in each category. [10]

OR

3. Specify the working principles of the following QoS Routing Protocols.
a) Core Extraction Distributed Ad hoc Routing (CEDAR)
b) Positional Attribute based Next-hop Determination Approach (PANDA) [5+5]

4. Explain the functioning of the following Tree-based Multicast Routing Protocols
a) AMRIS b) MAODV c) LAM d) LGT [10]

OR

5. Describe in detail about Mobility-related solutions for TCP over Ad hoc networks.[10]

6. Explain clustering architecture of WSNs and the importance of the density of the WSN Network for the effective use in its applications. [10]

OR

7. Explain the operation of following WSN routing algorithms
a) Minimum Cost Forward Algorithm (MCFA)
b) Low-Energy Adaptive Clustering Hierarchy Algorithm (LEACH). [5+5]

8. Describe in detail the concept of N-party Diffie-Hellman key agreement used for key management. [10]

OR

9. Discuss about Node-Level software platforms. [10]

10. Describe TinyGAL programming model with its implementation details. [10]

OR

11. Compare and Contrast NS-2 simulator and TOSSM simulator in all aspects of their functionality for various applications. [10]

---ooOoo---