

Total No. of Questions : 10]

SEAT No. :

P4581

[Total No. of Pages : 2

[5669]-117

T.E. (Computer Engineering) (Semester- I)
DATA COMMUNICATION AND WIRELESS SENSOR NETWORK
(2012 Pattern)

Time : 2.30 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9. or Q.10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Assume suitable data if necessary.*
- 4) *Figures to the right indicate full marks.*

- Q1)** a) Explain Framing. Detail the methods of framing.(fixed and variable size framing) [6]
- b) How does Virtual Private Network work? Write applications of VPN.[4]

OR

- Q2)** a) 'In Adaptive delta modulation quantization error increases as slope error reduces' State true or false with proper justification. [6]
- b) Explain sensor network organization and tracking? [4]

- Q3)** a) Explain in detail with algorithm the working of Go-Back-N ARQ protocol. [6]
- b) Describe the working of Piconet. [4]

OR

- Q4)** a) Ten thousand reservation stations are available for use of single slotted ALOHA channel. The average station has 18-reservation request per hour. A slot has 125 microseconds. What is approximate channel load? [6]
- b) How hidden station and exposed station problem affects the communication in wireless network. Explain in brief. [4]

P.T.O.

- Q5)** a) Describe how does STEM protocol provide solution to idle listening problem? Explain STEM-B and STEM-T. [10]
b) Write a note on Schedule based protocols and Contention based protocols. [6]

OR

- Q6)** a) Explain S-MAC protocol for WSN in detail. [8]
b) LEACH, is a TDMA based MAC protocol integrated with clustering and routing -justify. Also, explain with diagram the organization of LEACH rounds. [8]

- Q7)** a) Explain data dissemination, gathering, and detail about flooding technique in wired and wireless adhoc networks. [8]
b) Explain in detail Attribute based routing with an example attribute value event record. [8]

OR

- Q8)** a) List out the routing challenges and design issues in WSN. [6]
b) What is the main objective behind designing SPIN routing protocol for WSN? Also, discuss its various deficiencies. [10]

- Q9)** a) Explain the role of every sensor node in information driven sensor querying (IDSQ) method. [8]
b) Explain the Impact of anchor placement and discuss how a node with unknown position can directly communicate with anchors. [8]
c) Explain ZigBee IEEE standard. [2]

OR

- Q10)**a) How the design of Sensor operating system (SOS) different from traditional operating system? List the issues in designing OS for WSN.[7]
b) Comparison of Tiny OS with other OS like MATE, MAGNET and MANTIS. [7]
c) “In future, WSNs are expected to be integrated into the “Internet of Things”. justify the statement. [4]

