

Total No. of Questions : 8]

SEAT No. :

P1338

[Total No. of Pages : 2

[4858] - 1082

T.E. (Computer Engineering) (Semester - I)
Data Communication and Wireless Sensor Network
(2012 Pattern) (End Semester)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Assume suitable data if necessary.*

- Q1)** a) Explain FHSS and DSSS with help of diagram. **[8]**
- b) A pure ALOHA network transmits 200-bit frame on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces **[6]**
- i) 1000 frames per second.
 - ii) 500 frames per second.
- c) Write a note on: **[6]**
- i) Zigbee.
 - ii) WiMax.

OR

- Q2)** a) Explain stop and wait ARQ, GO back-n ARQ and selective repeat ARQ. Comment on the performance of each. **[6]**
- b) Define sampling. Draw and explain different types of sampling with diagram. **[6]**
- c) Write a note on: **[8]**
- i) WiFi.
 - ii) Bluetooth.

P.T.O.

- Q3)** a) Explain exposed terminal problem and hidden terminal problem in Wireless Network in detail. [8]
b) Explain S-MAC protocol for WSN. [8]

OR

- Q4)** a) Write a short note on: [8]
i) Contention based protocols.
ii) Scheduled based protocols.
b) What is STEM, STEM-B, STEM-T? [8]

- Q5)** a) Explain various design issues and routing challenges in WSN. [8]
b) Explain flooding and gossiping in detail. [8]

OR

- Q6)** a) With the help of diagram explain algorithm for SPIN. Explain types of SPIN. [8]
b) With the help of diagram explain two phases of LEACH protocol. Compare LEACH with PEGASIS. [8]

- Q7)** a) List and explain common techniques used for Infrastructure establishment. [8]
b) Explain layered architecture of CDN. [5]
c) Write short note on Tiny OS. [5]

OR

- Q8)** a) What is localization? Why it is needed? Explain phases of localization. [8]
b) With flow chart explain IDSQ algorithm. [5]
c) List types of queries in sensor network and give example. [5]

