Total No. of Questions : 8]

SEAT No. :

P1338

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T.E. (Computer Engineering) (Semester - I)

Data Communication and Wireless Sensor Network

(2012 Pattern) (End Semester)

Time : 2 1/2 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]**