Total No. of Questions : 10]

SEAT No. :

P2460

[Total No. of Pages : 2

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

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Question number 1,2,3,4 (10 marks each) Attempt Q1 OR Q2, Q3 OR Q4***
2) ***Question number 5,6,9,10 (16 marks each) Attempt Q5 OR Q6, Q9 OR Q10***
3) ***Question number 7,8 (18 marks each) Attempt Q7OR Q8***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Assume Suitable data if necessary.***
6) ***Figures to the right indicate full marks.***

Q1) a) Comment on the performance of stop and wait ARQ, GO back-n ARQ and selective repeat ARQ with suitable diagrams. **[6]**

b) Explain Category l and Category 2 WSN applications. **[4]**

OR

Q2) a) Explain Framing. Detail the methods of framing.(fixed and variable size framing) **[6]**

b) What is RFID communication? Differentiate between RFID and Bar Code communication. **[4]**

Q3) a) Give definitions. **[4]**

i) Baud rate
ii) Bit rate
iii) SNR
iv) Shannon Hartley Theorem

b) Explain with help of diagram frequency hopping spread spectrum What are advantages of FH/SS over DS/SS. **[6]**

OR

Q4) a) Compare Circuit, Packet and Message switching. **[6]**

b) Draw and explain Bluetooth Frame Format. **[4]**

P.T.O.

Q5) a) Explain Significance of LEACH protocol? Comment on various approaches for the cluster selection in LEACH protocol. **[6]**

b) How hidden station and exposed station problem affects the communication in wireless network. Justify. **[5]**

c) Differentiate with the suitable example Contention based protocol and Schedule based protocol. **[5]**

OR

Q6) a) Explain the detailed working of STEM protocol. Differentiate between STEM-T and STEM-B protocol. **[6]**

b) SMAC protocol is used for efficient energy utilization in WSN. Justify. **[5]**

c) With the help of detailed flow schematic diagram explain CSMA-CA protocol. **[5]**

Q7) a) State with TRUE or FALSE with justification" SPIN uses attribute value pairs for data and queries" **[6]**

b) What are different routing challenges and design issues in WSN? **[8]**

c) Elaborate on ZigBee protocol in WSN **[4]**

OR

Q8) a) Explain GEAR routing in WSN. **[8]**

b) Explain the following. **[4]**

i) Adaptive Routing Protocol with examples

ii) Non adaptive routing protocol with examples

c) Explain in detail data dissemination and gathering. **[6]**

Q9) a) Comment on importance of localization. Explain phases of localization in detail. **[6]**

b) With the help of architectural block diagram explain Nano RK OS of WSN. **[5]**

c) Explain information based sensor tracking. **[5]**

OR

Q10)a) Explain in detail the operating system design issues in WSN with reference to architecture and functions. **[6]**

b) What is the impact of anchor node placement in WSN? **[5]**

c) With flow chart explain the working of IDSQ. **[5]**