Total No. of Questions : 10]

SEAT No. :

P2460

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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]

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