

Total No. of Questions : 10]

SEAT No. :

P2460

[Total No. of Pages : 2

[5253] - 183

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 Q7 OR 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 1 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]

