May 2017

Total No. of Questions : 10]

SEAT No. :

P2607

[Total No. of Pages : 2

[5153]-583

T.E.(Computer Engineering)

DATA COMMUNICATION AND WIRELESS SENSOR NETWORK

(2012 Pattern) (Semester - I) (End Sem.) (310243)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Attempt Q.1 OR Q.2, Q3 OR Q.4 10 Marks each.*
2) *Attempt Q.5 OR Q.6 16 Marks each.*
3) *Attempt Q.7 OR Q.8 18 Marks each.*
4) *Attempt Q.9 OR Q.10 16 Marks each.*
5) *Neat diagrams must be drawn wherever necessary.*
6) *Assume Suitable data if necessary.*
7) *Figures to the right indicate full marks.*

Q1) a) "In Adaptive delta modulation quantization error increases as slope error reduces" State true or false with proper justification. **[6]**

b) How does Virtual Private Network work? Write applications of VPN. **[4]**

OR

Q2) a) Draw and Explain B8ZS, AMI line coding techniques in detail. **[6]**

b) Explain necessity of flow and error control protocols in Wireless Sensor Network. **[4]**

Q3) a) Three thousand six hundred reservation stations are available for use of single slotted ALOHA channel.The average station have 10 reservation request per hour. A slot has 125μs. What is approximate channel load? **[6]**

b) "CSMA CD minimizes the recovery time post collision while CSMA CA reduces possibility of a collision" State true or false with justification. **[4]**

OR

Q4) a) Identify the difference between Ad hoc and cellular network. **[6]**

b) Write in detail applications of Wireless body Sensor Network in health domain. **[4]**

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Q5) a) Design suitable criteria that decides selection of schedule or contention based protocols in MAC layer. **[8]**

b) Explain with neat diagram Sensor Medium Access Control Protocol in Wireless Sensor Network. **[8]**

OR

Q6) a) Discuss in detail design issues related to address and name management in Wireless Sensor Network. **[8]**

b) Describe the necessity of low duty cycle protocols and wakeup concept in Wireless Sensor Network. **[8]**

Q7) a) Explain the concept of "Information via Negotiation" in SPIN. **[8]**

b) Explain in detail data centric or attribute based routing protocol with example. **[5]**

c) Describe role of network layer in data dissemination and gathering. **[5]**

OR

Q8) a) "Low Energy Adaptive Clustering Hierarchy protocol improves lifetime of the Wireless Sensor Network" State True or False with justification. **[8]**

b) With neat diagram explain working of Power Efficient Gathering in Sensor information System protocol in Wireless Sensor Network. **[5]**

c) Compare proactive and reactive routing protocol design issues in Wireless Sensor Network. **[5]**

Q9) a) "Tiny OS is application specific operating system for Wireless Sensor Network" Justify the statement with respective to architecture, design, issues, functions. **[8]**

b) Design role of Wireless Sensor Network in Internet of Things. **[8]**

OR

*Q10)*a) "Designing algorithms for Localization and positioning of Wireless Sensor Network in remote, disastrous region is challenging" Justify with example. **[8]**

b) Discuss necessity of big data solutions for Wireless Sensor Network. **[4]**

c) Explain significance of anchor placement in Wireless Sensor Network. **[4]**