Total No. of Questions : 8]

SEAT No. :

P4544

[Total No. of Pages : 2

[4959] - 1100A

B.E. (E & TC) (Semester - II)
WIRELESS NETWORKS
(2012 Pattern) (Elective - IV (d)) (Theory)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates :-

1) *Answer 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) *Figures to the right indicate full marks.*
4) *Use of non-programmable electronic pocket calculator is allowed.*
5) *Assume suitable data, if necessary.*

Q1) a) What are the reasons for adopting All IP architectures in all the advanced wireless technologies? With the help of suitable schematic, describe 3GPP Release 5 All IP network architecture. **[7]**

b) What is the importance Virtual Private Network (VPN)? Describe various types of mobile VPNs. **[7]**

c) Describe the various types of hand-offs in used 3G networks. **[6]**

OR

Q2) a) What are the advantages of using CDMA air interface in 3G technologies? With the help of suitable diagram, describe 3GPP Release 4 distributed network architecture. **[7]**

b) Describe various types of services used in IEEE 802.11 for delivering protocol data units, accessing the network and for maintaining privacy. **[7]**

c) Discuss the evolution of 3GPP2 wireless technologies. **[6]**

Q3) a) Enlist the important features of LTE systems. With the help of block schematic, describe various components required in LTE architecture. **[9]**

b) How is MIMO used to enhance the performance of LTE? Draw and explain eNodeB 4 × 4 MIMO. **[9]**

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25

OR

Q4) a) Explain the importance of using HARQ, QCI and ARP in LTE systems. **[9]**

b) What are advantages of using TDD in wireless networks? Draw and explain TDD frame structure used in LTE. **[9]**

Q5) a) Why do we use OFDM and its different flavors in WiMAX technology? With the help of suitable diagrams, explain the detailed working of OFDM. **[8]**

b) Write short notes on: **[8]**

   i) Spectrum used for WiMAX Technology

   ii) Frequency Planning in WiMAX Networks

OR

Q6) a) With the help of suitable schematic, explain the generic architecture of WiMAX technology. **[8]**

b) Describe the evoluation of WiMAX. Compare different variations of IEEE 802.16? **[8]**

Q7) a) What is the significance of using SIGTRAN? With the help of suitable diagram, explain in brief various protocols used in its stack. **[8]**

b) What are advantages of using SIP in VoIP? Explain the complete functionalities of SIP for VoIP calls. **[8]**

OR

Q8) a) Compare in detail the various protocols such as H.323, SIP and MEGACO used for VoIP. **[8]**

b) How do we differentiate QoS requirements for data and audio? Explain various mechanisms used to maintain QoS in VoIP. **[8]**

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