

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]

P.T.O.

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 evolution 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]

