Total No. of Questions : 12]

SEAT No. :

P1413

[Total No. of Pages : 3

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May - June - 2012

B.E. (E & TC)

MOBILE COMMUNICATION

(2008 Pattern) (Sem. - I) (Elective - II)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answer three questions from section I and three questions from section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain frequency reuse concept in cellular networks and State formula for N (cells per cluster). **[8]**

b) Discuss evolution of modern wireless communication system from 2G to 3G networks. **[9]**

OR

Q2) a) Explain the following terms in detail. **[9]**

i) Cell splitting

ii) Sectoring

b) Explain handoff mechanism in detail and call dropping conditions while handoff. **[8]**

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Q3) a) Discuss Reflection and Diffraction basic propogation mechanism in wireless communication. **[8]**

b) Assume a receiver is located 10 km from a 50 W transmitter. The carrier frequency is 900 MHz, free space propogation is assumed, Gt = 1, and Gr = 2, find. **[9]**

i) the power at the receiver,

ii) the magnitude of the E-field at the receiver antenna,

iii) the rms voltage applied to the receiver input assuming that the receiver antenna has a purely real impendance of 50 Ω and is matched to the receiver.

OR

Q4) a) Explain free space propogation model with formulae. **[9]**

b) Explain Direct RF channel impulse response measurement system. **[8]**

Q5) a) What is concept of equalization and state why adaptive equalizers are used for mobile communication. **[8]**

b) Explain BPSK and DPSK and compare performance of both. **[8]**

OR

Q6) a) Explain Minimum Shift Keying (MSK). **[8]**

b) Explain types of Frequency Hopping Spread Spectrum (FHSS) techniques in detail with block diagrams. **[8]**

SECTION - II

Q7) a) Explain important features of FDMA. **[8]**

b) Which are the important characteristics of speech signal? **[9]**

OR

Q8) a) Explain different types of CSMA protocols and reservation protocol. **[8]**

b) Discuss GSM Codec in detail. **[9]**

Q9) a) Explain GSM Services in detail. **[9]**

b) Explain steps involved in call setup by a mobile phone. **[8]**

OR

Q10) a) What are the types of GSM Logical channels, explain in brief. **[8]**

b) Describe GSM Reference model with block diagram. **[9]**

Q11) a) Explain IS 95 CDMA air interface. **[8]**

b) Explain CDMA Handoff paramaters in detail. **[8]**

OR

Q12) a) Describe different types of Handoffs in CDMA. **[8]**

b) Describe evolution of CDMA 2000 from IS95. **[8]**

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