Total No. of Questions : 12]

SEAT No. :

P2737

[Total No. of Pages : 3

[5154]-121
B.E. (E & TC)
MOBILE COMMUNICATION
(2008 Course) (404185 D) (Elective - II) (Semester - I)

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

Instructions to the candidates:

1) ***Answer any 3 questions from each section.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions carry equal marks.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Briefly explain with diagram, examples of wireless communication system. **[8]**

b) Describe the following terms of cellular: **[8]**

i) Handoff strategies

ii) Channel Assignment strategies

OR

Q2) a) Classify and explain different types of Interferences in GSM. **[8]**

b) Explain with neat diagram techniques to improve coverage and capacity in cellular system. **[8]**

Q3) a) Compare free space propagation model with ground reflection model. **[8]**

b) List three important effects due to multipath in the radio channel and explain following factors influencing small scale fading: **[10]**

i) Multipath propagation

ii) Speed of mobile

iii) Speed of surrounding objects

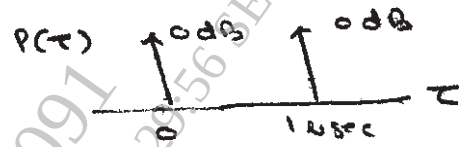
iv) Transmission bandwidth of signal.

OR

P.T.O.

Q4) a) With neat diagram, explain the working of spread spectrum channel impulse response system for small scale multipath measurements. **[9]**

b) Compute RMS delay spread for following power delay profile. **[9]**



If BPSK modulation is used, what is the maximum bit rate that can be sent through channel without needing on equaliser.

Q5) a) List out and explain the factors influencing the choice of modulation. **[8]**

b) With neat diagram, explain the working of BPSK receiver using carrier recovery circuits. **[8]**

OR

Q6) a) Describe with black diagram, DS.SS Transmitter and receiver system with binary phase modulation. **[8]**

b) Explain following factors determing the performance of an algorithm for adoptive equalizateos:- **[8]**

i) Rate of convergence

ii) Misadjustment

iii) Computational complexity

iv) Numerical properties.

SECTION - II

Q7) a) Describe the working operation of ADPCM encoder with neat diagram. **[8]**

b) Define Narrow band and wide band system. Compare multiple access techniques used in GSM and CAMA. **[8]**

OR

Q8) a) Define vocoders and draw the diagram of speech generation model. Briefly explain following vocoders

i) Channel vocoders

ii) Format vocoders **[8]**

b) Define the term "capacity of cellular systems" and derive an expression for carrier to inteference ratio (C/I). **[8]**

Q9) a) Draw and explain in detail the functionality of every blocks in GSM system architecture. **[10]**

b) Classify GSM logical channels. Explain full Rate and Half Rate Traffic channels. **[8]**

OR

Q10)a) Classify Handover mechanism in GSM and explain any one in detail with neat diagram. **[8]**

b) Describe with neat diagram, working of circuit switched data transmission technique. Derive an expression for time required in connection. **[10]**

Q11)a) Describe air interface in IS. 95 CDMA system with neat diagram. **[8]**

b) Classify and explain the significance of logical and physical channel in IS.95 CDMA. **[8]**

OR

Q12)a) Describe with neat diagram, soft handover mechanism in IS. 95 CDMA mobile system. **[8]**

b) Compare IS.95 CDMA and CDMA 2000 system. **[8]**