

Total No. of Questions : 12]

SEAT No. :

P775

[Total No. of Pages : 2

[4659] - 125

B.E. (Electronics) (Semester - II)

A: ADVANCED COMMUNICATION SYSTEM

(2008 Pattern) (Elective - IV)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

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

SECTION - I

- Q1)** a) Describe frequency reuse concept in cellular networks and state formula for N (cells per cluster). [6]
- b) Explain each of the following in brief. [8]
- i) Cell splitting.
 - ii) Sectoring.
- c) Explain multipath fading in cellular network. [4]

OR

- Q2)** a) Describe in detail Lee Model in cellular communication. [6]
- b) Derive the formula for mobile radio propagation over water. [6]
- c) Explain Delay spread and coherence bandwidth. [6]

- Q3)** a) Explain handoff mechanism in detail and call dropping conditions while handoff. [8]
- b) Derive the relation of free space path loss formula. [8]

OR

- Q4)** a) Describe various types of mobile antennas. [8]
- b) Explain Non fixed channel assignment algorithms. [8]

P.T.O.

- Q5)** a) Describe the various mechanism to increase the traffic capacity. [8]
b) With neat block diagram, explain GSM System Architecture. [8]

OR

- Q6)** a) Explain the various methods for reducing the interference. [8]
b) Describe Diversity concept to enhance signal to noise ratio. [8]

SECTION - II

- Q7)** a) Derive the relationship to find out period of the satellite's orbit. [8]
b) Describe attitude and orbit control system in satellite communication. [8]

OR

- Q8)** a) Explain with neat block diagram double conversion transponder. [8]
b) Describe various types of antennas which are used on satellite. [8]

- Q9)** a) Explain how TV signal transmitted in satellite broadcasting? [8]
b) Draw and describe block diagram of a QPSK system. [8]

OR

- Q10)** a) A satellite transponder has a bandwidth of 40 MHz. Earth stations use RRC filters with $\alpha = 0.4$. What is the maximum bit rate that can be sent through this transponder with [8]
i) BPSK ii) QPSK?
b) Derive the expression for Link Budget of Satellite communication system. [8]

- Q11)** a) Compare and contrast between FDMA, TDMA and CDMA systems. [10]

- b) Explain various configurations of antenna used in VSAT system. [8]

OR

- Q12)** Explain following terms w.r.t. VSAT (Any THREE) : [18]

- a) Signal Format.
b) MF- TDMA Scheme.
c) Protocols used in VSAT network.
d) Atmospheric Losses.

