

[5254] - 98
B.E. (Electronics)
ADVANCED COMMUNICATION SYSTEM
(2008 Pattern) (Elective - IV)

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) Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) State and describe formula for mobile radio propagation between fixed stations. **[8]**
- b) Why to use 1-mi. intercept? **[6]**
- c) Write note on Cell sectorization **[4]**

OR

- Q2)** a) Discuss How Cell splitting and frequency reuse in mobile communication enhances spectral efficiency. **[6]**
- b) Describe in detail working of Cellular system. **[8]**
- c) Define Line of sight & Obstructive Path. **[4]**

OR

- Q3)** a) Describe Interference reducing directional antennas and Space diversity antenna. **[8]**
- b) Describe near end and far end interference with suitable example. **[8]**
- Q4)** a) Derive free space path loss formula for wireless communication. **[8]**
- b) Discuss fixed and non-fixed channel assignment in Mobile Communication. **[8]**

P.T.O.

- Q5) a)** Describe the architecture of HSCSD. [8]
b) Explain how dynamic splitting is superior than permanent splitting. [8]

OR

- Q6) a)** How security is achieved in Mobile network? Explain algorithms related to Security. [8]
b) With neat block diagram, describe GSM architecture in detail. [8]

SECTION - II

- Q7) a)** Define and explain the following terms with respect to the satellite communication. [8]
i) Poles
ii) Latitude
b) Draw the block diagram and explain Attitude and Orbit Control subsystem of a satellite. [8]

OR

- Q8) a)** Discuss TT & C System of Communication satellite. [8]
b) Compare LEO, MEO and GEO Satellites. [8]
- Q9) a)** Derive Bit rate and C/N ratio for QPSK System. [8]
b) Define and explain the following terms with reference to the FM techniques. SNR, Pre-emphasis & De-emphasis. [8]

OR

- Q10) a)** A satellite transponder has a bandwidth of 358.4 MHz. Earth stations use RRC filters with $\alpha = 0.4$. What is the maximum bit rate that can be sent through this transponder with BPSK and QPSK? [8]
b) Discuss Link Design Procedure in C band. [8]

Q11)a) Explain the terms with respect to VSAT **[10]**

- i) Free space path loss
- ii) Edge of coverage loss

b) Explain with a neat diagram the FDMA frame structure. **[8]**

OR

Q12)a) What is the necessity of Multiple Access Techniques? **[10]**

b) Define and explain the meaning of VSAT? List the applications of VSAT with suitable example. **[8]**

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