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BTS(C) – VI – 11 – 016 – M

B. Tech Degree VI Semester Examination April 2011

EE 605 MODERN COMMUNICATION ENGINEERING

(*2006 Scheme*)

Time : 3 Hours Maximum Marks : 100

PART – A

(Answer ***ALL*** questions)

(8 x 5 = 40)

I. (a) How does a terminal microwave station differ from a repeater station?
(b) Briefly mention the frequency range and modulation methods used in microwave communication.
(c) Explain the different types of satellite orbits.
(d) What is the significance of 'antenna look angle' in satellite communication?
(e) Explain the concept of frequency reuse in cellular telephony.
(f) Explain the functional concept of DECT system.
(g) Explain the concepts of –
(i) MUF
(ii) Skip Distance
(h) Define radiation resistance of an antenna. What is the importance of this quantity?

PART – B

(4 x 15 = 60)

II. (a) Discuss the different types of fading in microwave communication. Explain the steps taken to minimize the effect of fading. (7)
(b) Discuss the salient features in the design of a microwave link. (8)

OR

III. (a) Discuss the antennas used in microwave links. Explain their propagation characteristics. (8)
(b) With the help of a block diagram, explain the working of a microwave terminal transmitter and receiver. (7)

IV. (a) What are the advantages and disadvantages of geostationary satellites? (7)
(b) What are the factors that affect this uplink design and down link design in geostationary satellite communication? Explain. (8)

OR

V. (a) Discuss the orbital parameters in detail related to satellite communication. (8)
(b) What is meant by a satellite transponder? Describe with the help of a block diagram. (7)

VI. (a) Compare the performances of a direct sequence and a frequency hopping spread spectrum. (8)
(b) Explain the working principle of CDMA. How capacity improvement is obtained in CDMA? (7)

OR

VII. (a) Explain in detail the working of an optical heterodyne receiver. (5)
(b) What is meant by cell splitting? How it helps in increasing the capacity? (10)

VIII. (a) Explain briefly the effect of earth's magnetic field on ionospheric radio wave propagation. (8)
(b) Explain ground wave propagation. (7)

OR

IX. (a) Explain Yagi-Uda array with a diagram. (8)
(b) Explain the principle of operation of parabolic reflector. (7)

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