ADIKAVI NANNAYA UNIVERSITY::RAJAMAHENDRAVARAM
IV B.TECH – II SEMESTER
ELECTRONICS AND COMMUNICATION ENGINEERING
BTECE801: MOBILE CELLULAR COMMUNICATIONS
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. a) Explain about basic cellular system with neat diagram [8M]
   b) List and explain the factors that influence the performance of cellular system [7M]
   (OR)
   c) What are the parameters that define the uniqueness of mobile radio environment? Explain any two. [8M]
   d) What are the limitations of Conventional mobile telephone system [7M]
2. a)Distinguish between Signal and Co-channel interference received by the mobile unit and cell cite [8M]
   b) With neat sketch, explain the concept of frequency reuse [7M]
   (OR)
   c) Explain the real time co-channel interference measure in detail [8M]
   d) Distinguish between the permanent splitting and dynamic splitting [7M]

3. a) What is the function of frequency management [8M]
   b) Explain how a handoff is initiated [7M]
   (OR)
   c) Write the channel sharing scheme with a neat sketch [8M]
   d) Differentiate between fixed and non-fixed channel assignment in detail [7M]

4. a) Explain services and features of TDMA [8M]
   b) Explain the architecture of GSM [7M]
   (OR)
   c) Write a short note on TDMA structure frame length & frame offset [8M]
   d) What are the services offered by GSM channels [7M]

Section-B (5 X 3 =15 Marks)

5. Answer any FIVE of the following:

a) Explain the Trunking Efficiency
b) Briefly explain about cell shape and handoff
c) Discuss about normal umbrella pattern antenna
d) Write a note on paging channels
e) What is the advantage of delayed handoffs
f) What is the significance of multiple access schemes? Explain
g) Explain briefly about long distance propagation
h) Write a short note on CDMA.

ADIKAVI NANNAYA UNIVERSITY::RAJAMAHENDRAVARAM

IV B.TECH – II SEMESTER

ELECTRONICS AND COMMUNICATION ENGINEERING

BTECE802: SATELLITE COMMUNICATIONS

MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)

1. a) Explain the architecture of a satellite communication system. [8M]
   b) Explain the various applications of satellite communications. [7M]

(OR)

   c) Explain the history of Indian satellite communications. [8M]
   d) Describe the various frequencies used for satellite communications. [7M]

2. a) Derive the expression for the time period of satellite's orbit [7M]
   b) Define the azimuth angle and derive the expression for it [8M]

(OR)

   c) Explain the altitude and orbit control system (AOCS) with necessary diagrams. [8M]
   b) What are the various approaches used to improve the reliability of the satellite? Explain any one. [7M]

3. a) What is satellite link equation? Derive the expression for it. [8M]
   b) Derive the expression for C/N ratio in a satellite link [7M]

(OR)

   c) What are the different types of antenna mounts used at earth station? Explain [8M]
   d) Explain the delay considerations of LEO, MEO and GEO satellites [7M]

4. a) Explain the frame structure of TDMA with a neat sketch [7M]
   b) Explain the generation of GPS signals with a neat sketch [8M]

(OR)

   c) Explain the principle FDMA with a neat diagram [7M]
   d) Explain the functions of control segment in GPS [8M]

Section-B (5 X 3 =15 Marks)

5. Answer any FIVE of the following:

a) Write the Keppler's laws of planetary motion
b) Define apogee of a satellite
c) What are the various orbital elements
d) List out the main types of antennas used on satellite
e) Define Intermodulation
f) List out the disadvantages of LEO satellites
g) What are the limitations of GPS.
h) Explain the principle FDMA.