2054
B.E. (Electronics and Communication Engineering)
Sixth Semester
EC-605: Satellite Communications

Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt* five *questions in all, including Question No. I which is compulsory and selecting two questions from each Unit. Use of scientific calculator is allowed.*
x-x-x

I. Attempt all question:-

a) What are the conditions required for an orbit to be Geostationary?

b) Distinguish single access and multiple accesses.

c) Name some mobile satellite system.

d) Define subsatellite point of a satellite.

e) What is meant by momentum wheel stabilization?   (5x2)

UNIT - I

II. a) Find the viewing angle of a geostationary satellite orbiting at 45000km from an earth station making an elevation angle of 35 degrees.

b) Explain the various applications of satellite communications.   (2x5)

III. a) Define and explain the terms roll, pitch and yaw.

b) State Kepler's three laws of planetary motion. Explain their relevance to artificial satellites orbiting the earth.   (2x5)

IV. a) Explain the altitude and orbit control system (AOCS) with necessary diagrams.

b) Derive the expression for C/N ratio in a satellite link.   (2x5)

UNIT - II

V. a) Discuss with a neat diagram the Anik-E C band transponder.

b) Explain the throughput considerations of LEO, MEO and GEO satellites.   (2x5)

VI. a) How GIS is integrated with remote sensing?

b) Write short note on GPS C/A code accuracy.   (2x5)

VII. a) Explain the effected of rain on satellite communication system.

b) Why is thermal control necessary in a satellite?   (2x5)

x-x-x