

2056

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. 1 which is compulsory and selecting two questions from each Unit. Use of scientific calculator is allowed.

*x-x-x***Q.1** Attempt all questions: -

- (a) List any two applications of satellite communication. (2)
- (b) Define perigee of a satellite. (2)
- (c) What is meant by P- code in GPS satellite? (2)
- (d) List out the frequency bands used for satellite services. (2)
- (e) What is tropospheric fading? (2)

UNIT - I

- Q.2** (a) Explain the architecture of a satellite communication system. (5)
- (b) State Kepler's three laws of planetary motion. Explain their relevance to artificial Satellites orbiting the earth. (5)
- Q.3** (a) Explain the effects of orbital inclination on satellite coverage. (5)
- (b) Explain eclipse effects and their impact on satellite operation. (5)
- Q.4** (a) Define the azimuth angle and derive the expression for it. (5)
- (b) Describe the functions of satellite communication subsystem. (5)

UNIT - II

- Q.5** (a) Explain the throughput considerations of LEO, MEO and GEO satellites. (5)
- (b) Compare GPS and differential GPS. (5)
- Q.6** (a) Write short note on GPS C/A code accuracy. (5)
- (b) Explain about the GPS receivers and its codes. (5)
- Q.7** (a) A signal experiences rain attenuation of 8 dB/km over 1.5 km path. Calculate total attenuation. (5)
- (b) Discuss the operation of SPADE communication system. (5)

x-x-x