

COURSE CODE(CREDITS): 18B1WEC845(3)

MAX. MARKS: 35

COURSE NAME: Satellite Communication

COURSE INSTRUCTOR: Salman Raju Talluri

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory. (b) Marks are indicated against each question in square brackets. (c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems.

1. Derive the equation for the received signal strength in two-ray model. What is the main difference between LOS and Two-ray model reception. [5m CO-3]
2. How can you increase the throughput of the satellite apart from Multiplexing techniques. Explain with a diagrams . [5m CO-4]
3. What do you mean by instantaneous field of view? How do you control it? What are the important properties of an antenna to increase the foot print of the satellite? [5m CO-4]
4. Explain in detail about the four resolution used in remote sensing via satellite communication. [5m CO-5]
5. Give 5 real-time applications of Satellite Communication with regards to different types of orbits or different types of satellites. [5m CO-5]
6. What are the three general propagation states in Mobile Satellite Channel? How these are different from Path-loss and atmospheric absorption. [5m CO-5]
7. Explain the following terms very briefly. [5m CO-1]
 - (a) RADAR principle
 - (b) Multi Spectral Imaging in Remote Sensing
 - (c) Two-slope model for channel gain and its significance
 - (d) Narrowband Fading and Wideband Fading
 - (e) Rayleigh Criterion