

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS- 2024

B.Tech-VIII Semester (Open Elective)

COURSE CODE(CREDITS): 18B1WEC845(3)

MAX. MARKS: 15

COURSE NAME: Satellite Communications

COURSE INSTRUCTOR: Salman Raju Talluri

MAX. TIME: 1 Hour

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. What is the significance of Kepler's second law? Give an application. A LEO satellite is in a circular orbit 322 km above the earth. Assume the average radius of the earth is 6378 km. Assume the earth eccentricity is 0. What is the orbital period, in minutes, for the LEO satellite? [3 m CO-1]
2. What are the three key parameters for the evaluation of the GSO link? Explain with diagrams. [3m CO-1]
3. What are the stabilization methods used in Satellite Bus system? Explain with neat diagrams [3 m CO-2]
4. With neat diagrams, explain the differences between two types of transponders. [3 m CO-2]
5. Explain the following terms very briefly [3 m CO-1]
 - (a) Selection of Up-link and Down-link frequencies
 - (b) Line of Nodes
 - (c) Geo-Synchronous Orbit