Enrollment No:----------

JAMIA HAMDARD
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Odd Semester Examination 2024
B.Tech (ECE)/B.Tech (ECE) Lateral Entry 7th Semester

Subject Name: Satellite Communication
Subject Code: BTECE- DEI 53

Time: 3 Hours
Max. Marks: 75

Section A (Attempt all questions: 7 x 5 marks = 35 Marks)

Q.No	Question	Marks	CO	BL
Q1.	Derive an expression for the calculation of system noise temperature for satellite receiver.	5	CO1	BL2
Q2.	Explain the role of basic elements of a satellite communication system.	5	CO4	BL5
Q3.	Explain the concept of solar day and sidereal day.	5	CO2	BL2
Q4.	Explain the three Kepler,s law of planetary motion and how are they applicable to the geostationary satellite.	5	CO1	BL2
Q5.	Determine the orbit eccentricity of a satellite moving in an elliptical orbit having the semi major axis equal to 16000 km. If the difference between the apogee and perigee is 25000 km and the earth radius is 6360 km.	5	CO3	BL3
Q6.	Discuss the role of attitude and orbit control system in satellite communication.	5	CO3	BL1
Q7.	What are the different modulation scheme used in satellite communication.	5	CO5	BL4

Section B (Attempt any four questions: 10 x 4marks = 40 Marks)

Q.No	Question	Marks	CO	BL
Q1.	Explain any two from the following: 1. Guard time 2. VSAT 3. IRADIUM satellite 4. GPS	10	CO4	BL5
Q2.	Distinguishing between multiplexing and multiple access. Compare FDMA and TDMA in brief.	10	CO2	BL2
Q3.	Derive the complete link design equation and find out the expression for C/N and G/T ratio.	10	CO4	BL6
Q4.	Explain briefly different types of INSAT series of satellite. Also differentiate between active and passive satellite.	10	CO3	BL3
Q5.	Draw the block diagram of satellite subsystem and explain the function of transponder and repeaters in a satellite system.	10	CO1	BL3
Q6.	What do you understand about the term look angle, angle of elevation, sub-satellite point and how the azimuth and elevation angle are calculated.	10	CO5	BL2

*BL : Bloom's Level