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Question Paper Code: 99416

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

Open Elective

Electronics and Communication Engineering

19UEC916 – Satellite Communication Principles and Applications

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) List out radio propagation impairments of satellite communication and describe the impacts of Atmospheric absorption, attenuation and rain attenuation CO1-U (20)

Or

- (b) State Kepler's three laws of planetary motion. Illustrate in each case their relevance to artificial satellites orbiting the Earth? CO1-U (20)

2. (a) Analyze the performance of various factors governing the design of satellite link CO2-App (20)

Or

- (b) Solve C/N ratio is directly proportional to G/T ratio from the calculation of system noise temperature. Compare and Analyze the noise performance in satellite link design by considering system noise temperature CO2-U (12)

3. (a) Illustrate the Working principle and application of CATV and MATV systems with suitable diagram. CO2-App (20)

Or

- (b) With the aid of a block schematic, briefly describe the functioning of the receive only home TV systems CO1-U (20)

4. (a) What type of multiple access technique is used in which a number of users can occupy all of the transponder bandwidth all the time. Explain in detail about that access. CO2-App (20)

Or

- (b) Explain in detail the operation of the Spade system of demand assignment. What is the function of the common signaling channel? CO1-U (20)

5. (a) Analyze, why a minimum of four satellites are visible at an earth location utilizing the GPS system for position determination. What does the term dilution of precision refer to? CO6-Ana (20)

Or

- (b) Describe the main features of Radarsat. Explain what is meant by dawn to dusk orbit and why the Radarsat follows such on orbit. Justify your Answer. CO2-App (20)