(3 Hours) **[Marks: 75]**

N.B:

1. attempt any three questions from each section
2. Answers to the two sections must be written in same answer sheet.
3. Figures to the right indicate full marks.
4. Assume additional data if necessary but state the same clearly.
5. Symbols have their usual meanings and tables have their usual standard design unless stated otherwise.
6. Use of Simple calculators and statistical tables is allowed.

Section I

1	A	Write a short note on Half and Full Duplex Asynchronous Communication in RS-232.	6
	B	Explain the implementation of CSMA/CD and CSMA/CA.	6
2	A	Explain Multicast Addressing in detail with an example.	6
	B	How does a 'Cycle of Bridges' form? Explain with a neat diagram. How the problem of looping is prevented in this case?	6
3	A	What is Multiplexing? Explain Wavelength Division? Time Division and Spread Spectrum Multiplexing.	6
	B	Explain the different Satellite configurations used for data transmission.	6
4	A	Explain the following network performance characteristics: a. Delay and b. Throughput.	6
	B	State examples of WAN Technologies and briefly explain any three.	6
5	A	Explain Dijkstra's Shortest Path computation algorithm with a neat diagram.	6
	B	Explain the fundamental quantitative measures of a network and explain how they relate to capacity.	6

Section II

6	A	Explain the different Keplerian orbital elements.	6
	B	What is System Noise? Therefore, explain Antenna Noise.	7
7	A	Explain Hohmann's Transfer orbit.	6
	B	What is Radio Wave Propagation impairment? Explain its causes.	7
8	A	Explain Intermodulation Noise.	6
	B	What are the causes of Depolarisation? Explain any two.	7

TURN OVER

9 A Explain the terms 'Sidereal Time' and 'Orbital Plane' using suitable diagrams. 6

  B Explain parabolic reflectors. 7

10 A What are the issues faced by communication satellites with respect to Lifetime 6
and Reliability?

  B Explain the terms "up-link" and "down-link" for a communication satellite. 7
Derive an expression for saturation flux density in terms of EIRP.

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