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Pages. 3

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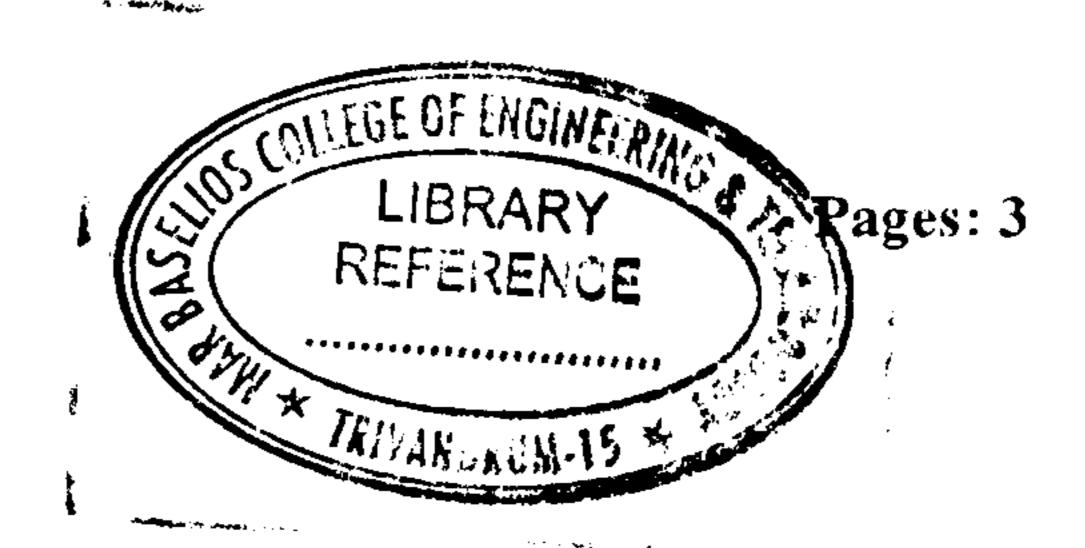
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## APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: CS 307

Course Name: DATA COMMUNICATION

Max.	Mar	ks: 100 Duration: 3	Hour
		PART A	Mark
		Answer all questions, each carries3 marks.	
I		Describe simplex, half-duplex and full-duplex transmission modes with suitable examples.	(3)
2		Identify the significance of Nyquist bandwidth and Shannon capacity formula in determining the performance of communication in a network.	(3)
3		Discuss time domain and frequency domain concept of a signal. Draw	(3)
		the frequency domain plot of a periodic signal.	
4		How the twisting affects performance in twisted pair cable?	(3)
			()
		PART B	
		Answer any two full questions, each carries9 marks.	
5	a)	What are the various transmission impairments and explain how they	(9)
_6	_a)_	affect performance of a communication link? <u>Define Channel Capacity. Calculate the appropriate bit rate and signal</u>	(5)
		levels for a channel with 100 Mhz bandwidth and SNR of 255.	` ′
	b)	Compare terrestrial and satellite microwave transmission.	(4)
7	a)	Explain the working principle of parabolic reflective antenna with	(5)
		suitable diagrams.	
	b)	For a parabolic reflective antenna with a diameter of 4 m, operating at 13 GHz, what is the effective area and theantenna gain?  PART C	(4)
		Answer all questions, each carries3 marks.	
8		Name any two line coding schemes which provide self-	(3)
		synchronization. Explain with reasoning. Draw the pattern for any one	
		of such scheme for the following data: 10101111.	
9		Explain how Statistical TDM utilizes channel bandwidth better than	(3)
		Synchronous TDM.	
10		How interference is avoided in frequency division multiplexing?	(3)
		Explain with suitable figures.	



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- 18 a) Discuss Frequency hopping spread spectrum technique (10)
- a) What is Circuit switching? Explain the three phases in Circuit (10) switching with suitable diagrams.
- 20 a) Compare and contrast Datagram and Virtual-circuit packet switched (5) networks?
  - b) With the help of a neat block diagram, explain the structure of a packet (5) switch.