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Pages: 2

Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree Supplementary Examination October 2022 (2015 Scheme)

Course Code: EC404

Course Name: ADVANCED COMMUNICATION SYSTEMS

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks. Marks

1 a) Explain how the diversity is enhancing the performance of radio wave propagation? With necessary diagrams explain space diversity and frequency diversity in communication system. (8)

b) Explain briefly modulation schemes involved in DVB-S, DVB-C and DVB-T system. (7)

2 a) Briefly describe the four major sections of a microwave terminal station. (8)

b) Explain DCT (Discrete Cosine Transform) based image compression technique. (7)

3 a) Explain line of sight path characteristics and derive the expression for free space path loss. (7)

b) Explain the basic working of Plasma displays with suitable diagrams. Compare it with LED and LCD display systems. (8)

PART B

Answer any two full questions, each carries 15 marks.

4 a) Explain the block diagram of a satellite repeater. (8)

b) Compare the features of mobile standards from 1G to 4G. (7)

5 a) Explain with block diagram Direct to Home Satellite Systems. (7)

b) Explain with figure a wide area paging system. (4)

c) Compare wireless Personal Area Networks and Wireless Local Area Network. (4)

6 a) Explain link budget calculations in satellite communication systems. Derive the expressions for uplink and down link. (8)

b) Explain WIMAX architecture with necessary figure. (7)

PART C

Answer any two full questions, each carries 20 marks.

7 a) Using Friis free space equation, explain free space propagation model in wireless communication. (10)

	b)	List out the important features of TDMA, FDMA and CDMA	(10)
8	a)	What is meant by small-scale fading? List out the factors influencing small-scale fading.	(5)
	b)	Explain frequency reuse concept in cellular communication.	(5)
	c)	Explain with figure GSM architecture.	(10)
9	a)	Explain the concept of cell splitting, cell sectoring, repeaters and microcell.	(10)
	b)	Explain the concepts of Push to Talk (PTT) technology.	(5)
	c)	Write notes on Ultra-Wideband Systems (UWB).	(5)

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