Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EE401

Course Name: Electronic Communication

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks. Marks

1		With the help of block diagram, explain the working of balanced modulator.	(5)
2		Draw the block diagram of super heterodyne receiver and explain the function of mixer stage.	(5)
3		Explain the block diagram of a colour television transmitter	(5)
4		Differentiate between PPM and PWM with sketches.	(5)
5		Explain the significance of TDMA for satellite communication?	(5)
6		Explain the role of earth station in the satellite communication systems?	(5)
7		With a block schematic explain the operation of GPS.	(5)
8		Explain how cell splitting improves the capacity.	(5)

PART B

Answer any two full questions, each carries 10 marks.

9	a)	A modulating signal $v_m(t)= 5 \sin (6280\ t)$ is used to modulate a carrier signal $v_c(t)= 15 \sin(62800\ t)$. Determine the modulation index, side band frequencies, amplitudes and bandwidth. Also draw the frequency spectrum.	(5)
	b)	When do you prefer VSB signals to SSB. Why?	(5)
10	a)	With a neat schematic explain the function of each block in FM transmitter using Armstrong Modulator.	(6)
	b)	Explain following parameters of Radio receiver: i) adjacent channel selectivity and ii) image frequency rejection.	(4)
11	a)	Draw typical AGC circuit for a super heterodyne receiver and explain its working.	(5)
	b)	Explain the working principle of a FET reactance modulator for FM generation.	(5)

PART C

Answer any two full questions, each carries 10 marks.

12	a)	Derive the basic radar equation, as governed by the minimum receivable echo power Pmin.	(5)

	b)	Differentiate between interlaced scanning and progressive scanning.	(5)
13	a)	Draw and explain the block diagram of an HDTV system.	(5)
	b)	Explain the block diagram of monochrome TV receiver.	(5)
14	a)	State the significance of Nyquist rate in sampling process.	(4)
	b)	Explain the role of encoder and decoder in PCM.	(6)

PART D

Answer any two full questions, each carries 10 marks.

15	a)	Differentiate between FDMA and CDMA?	(4)
	b)	Write notes on step index and graded index fibres.	(6)
16	a)	Explain the schematic diagram of a WiFi cellular architecture.	(4)
	b)	What is co-channel interference and how is it reduced?	(6)
17	a)	Explain the features of any photodiode as an optic light detectors.	(5)
	b)	Draw and explain the schematic diagram of a typical optical fibre link.	(5)

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