APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

08 PALAKKAD CLUSTER

Q. P. code :CSP0817121-J   (pages: 2)   Name:

Reg No:

FIRST SEMESTER M.TECH. DEGREE EXAMINATION DEC 2017

08EC6521/08EC6221 Advanced Digital Communication

Branch: Electronics and Communication Engineering

(Common to CESP &ECE)

Time:3 hours   Max.marks: 60

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

Q.no.	Module 1	Marks
1.a	Explain Correlation function.	3
	Answer b or c	
b	Explain with example Rayleigh and Rician distributions.	6
c	Explain moment generating function and Gaussian process.	6

Q.no.	Module 2	Marks
2.a	What is Cauchy Schwarz inequality?	3
	Answer b or c	
b	Explain briefly about optimum receiver for signals corrupted by AWGN channel with example.	6
c	Explain the frequency domain interpretation of matched filter.	6

Q.no.	Module 3	Marks
3.a	What is ML criterion?	3

Answer b or c

b	Explain probability of error for envelop detection of M-ary orthogonal signals.	6
c	Explain optimum detector for binary signals with example.	6

Q.no.	Module 4	Marks
4.a	Explain fading multipath channel.	3

Answer b or c

b	Explain Rayleigh fading channel.	6
c	Explain statistical model of fading channel.	6

Q.no.	Module 5	Marks
5.a	Explain non-coherent detection	4

Answer b or c

b	Explain optimum non-coherent detection.	8
c	Explain performance of BPSK over wireless channels.	8

Q.no.	Module 6	Marks
6.a	What is the need of equalizer?	4

Answer b or c

b	Explain two types of equalizers.	8
c	Explain symbol synchronization in signal demodulation.	8