APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

08 PALAKKAD CLUSTER

Q. P. code :CE0818242-P **(pages: 2)** **Name:**

Reg No:

SECOND SEMESTER M.TECH. DEGREE EXAMINATION APRIL- 2018

Branch: ECE Specialisation: CESP/ECE

08EC6242(C)/08EC6542(C) SPREAD SPECTRUM AND CDMA SYSTEMS

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 the processing gain.	3
		Answer b or c	
	b	What is DS-SS system with coherent binary PSK? Quantify your answer with neat sketches.	6
	c	Analyse the generation of slow frequency hopped spread M-ary FSK and fast frequency hopped spread M-ary FSK with appropriate diagrams.	6

Q.no.		Module 2	Marks
2.a		Illustrate the Walsh codes in CDMA technology.	3
		Answer b or c	
	b	Conceptualize tracking giving particular emphasis on delay lock tracking.	6
	c	Exemplify the significance of coarse synchronization of a FH signal.	6

Q.no.		Module 3	Marks
3.a		Give an account on the importance of RAKE receivers.	3
		Answer b or c	
	b	Give your perspective in Low probability of intercept method in communication systems.	6
	c	Obtain the error probability of DS-CDMA system under AWGN and fading channels.	6

Q.no.	Module 4	Marks
4.a	Distinguish between soft and hard handoffs.	3
	Answer b or c	
b	Explain the reverse link power control in cellular wireless system.	6
c	With suitable illustrations, describe the procedure involved in soft handoff, in adding and dropping base stations.	6

Q.no.	Module 5	Marks
5.a	Illustrate the single user and multi-user detection techniques in spread spectrum communication technology.	4
	Answer b or c	
b	Scrutinize the relevance of MMSE detector.	8
c	To make a clear statement of any method used to detect the multiuser interference in spread spectrum communication.	8

Module 6

Q.no.		Marks
6.a	Write a short note on the IS-95 standard.	4
	Answer b or c	
b	With an example, explore the CDMA 2000 standard with relevant diagrams.	8
c	Analyse the concept and features of multicarrier CDMA technology with neat sketches of transmitter and receiver.	8