

Name :  
Reg No :

**B**

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY  
07 THRISSUR CLUSTER**

**SECOND SEMESTER M.TECH. DEGREE EXAMINATION APRIL 2018**

**Electronics and Communication Engineering**

**Communication Engineering & Signal Processing**

**07EC6204**

**WIRELESS COMMUNICATION**

**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

<b>Q.no.</b>	<b>Module 1</b>	<b>Marks</b>
<b>1a</b>	Give the received signal models in a i) time varying multipath fading channel. ii) time-invariant flat fading channel	<b>4</b>
	<b>Answer b or c</b>	
<b>b</b>	Derive the Ten-ray model of Path loss in wireless channel. Compare the received power with that of free-space Path-loss scenario.	<b>5</b>
<b>c</b>	Show, how Scattering function can be utilized to characterize a flat-fading channel, and obtain delay parameters from it.	<b>5</b>
<b>Q.no.</b>	<b>Module 2</b>	<b>Marks</b>
<b>2a</b>	Define array gain and diversity gain. How does the diversity order affect receiver BER performances	<b>4</b>
	<b>Answer b or c</b>	
<b>B</b>	Derive Array gain for MRC and EG Combining	<b>5</b>
<b>C</b>	Deduce expression for received SNR in a 2X1 Alamouti Transmit diversity scheme.	<b>5</b>
<b>Q.no.</b>	<b>Module 3</b>	<b>Marks</b>
<b>3a</b>	Give the optimum power allocation strategy for a flat fading channel when CSIR and CSIT are available	<b>4</b>
	<b>Answer b or c</b>	
<b>B</b>	Deduce expression for the capacity of a time-varying fading channel with power adaptation	<b>5</b>

