

PILLAI COLLEGE OF ENGINEERING, NEW PANVEL (Autonomous) (Accredited 'A+' by NAAC) END SEMESTER EXAMINATION

ENGINE	ERING May 2023	
SEM-VI	BRANCH: Electronics and Telecommunication	
Subject	ect:- Wireless and Mobile Communication Time: 02.00 Hours	
Max. Marks: 60 Date: 02/05/2023		
N.B 1. Q.1 is compulsory Subject Code ET 309		9
2. <i>A</i>	Attempt any two from the remaining three questions	
3. E	ach Question carry 20 marks.	_
Q.1.	Attempt All	Marks
a)	Define piconet, scatternet, park mode, sniff mode and Hold mode?	5
b)	Define Doppler shift, Coherence Bandwidth and Coherence time?	5
c)	Consider a transmitter which radiates a sinusoidal carrier frequency of	
	1850 MHz. For a vehicle moving 96 km/h, compute the received carrier	
	frequency if the mobile is moving	
	(a) Directly towards transmitter	5
	(b) Directly away from the transmitter	
	(c) In a direction perpendicular to the direction of arrival of the transmitted	
	signal	
d)	Consider GSM900 cellular radio system with 20W transmitted power from	
	Base Station Transceiver (BTS). The gain of BTS and Mobile Station (MS)	
	antenna are 8dB and 2dB respectively. The BTS is located 10km away	5
<i>.</i> ,	from MS and the height of the antenna for BTS and MS are 200m and 3m	
	respectively. By assuming plane earth loss between BTS and MS, calculate	
	the received signal level at MS?	
Q.2.	Attempt All	
a)	Differentiate between WiMAX and Wi-Fi?	4

aj	Differentiate between whome and with T1.	4
b)	Explain radio propagation mechanism?	4
c)	Explain advantages, disadvantages and applications of Wireless Local Area networks?	6
d)	Explain 5G architecture?	6
Q.3.	Attempt All	
a)	Compare Cellular and Ad hoc networks?	4
b)	Explain M2M Communication?	4
c)	Explain Wireless Sensor network model?	6

QP CODE 226861

d)	Explain ZigBee components and network topologies?	6
Q.4.	Attempt All	
a)	Compare 1G to 4G technology?	4
b)	A transmitter produces 50W of power.A) Express the transmit power in dBm;B) Express the transmit power in dBW;C) If 50 W is applied to a unity gain antenna with 900MHz carrier, find the received power at a distance of 100m and 10 km from the antenna?	4
c)	Explain Bluetooth network configuration?	6
d)	Explain Cooperative Communications?	6