GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (OLD) EXAMINATION – SUMMER 2019

Subject Code: 171004   **Date: 27/05/2019**

Subject Name:Wireless Communication

Time: 02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full mark0073.**

Q.1	**(a)**	Compare 2G, 2.5G, 3G and 4G in brief.	**07**
	(b)	Explain frequency reuse concept with suitable figure	**07**
Q.2	**(a)**	Define following: MAHO, RSSI, Cell Dragging, Coherence BW, Coherence Time. Cell, Cluster	**07**
	(b)	Prove that the co- channel reuse ratio is given by Q= $\sqrt{3N}$, where N = i ^{2} + ij + j ^{2} (Use cosine law & hexagonal geometry)	**07**

OR

	(b)	Explain the difference between cell splitting and sectoring.	**07**
Q.3	**(a)**	Explain Ground reflection (Two Ray) model and find E_{TOT} in terms E-field at the reference distance d_o , Receiver distance and antenna height.	**07**
	(b)	Describe the factors influencing and effect of small scale fading.	**07**

OR

Q.3	**(a)**	Explain Impulse response model of a multipath channel.	**07**
	(b)	Explain Diffraction of Radio Signals using Fresnel Zone Geometry. Show expression for nth Fresnel Zone circle in terms of λ,d1 & d2.	**07**
Q.4	**(a)**	Explain TDMA technique. What is frame structure of TDMA system? OR Show how to work out efficiency of TDMA system.	**07**
	(b)	Write a S.N. on Zig Bee.	**07**

OR

Q.4	**(a)**	Write S.N on Rake Receiver.	**07**
	(b)	Describe Spread spectrum multiple access technique (FHMA &CDMA) .	**07**
Q.5	**(a)**	Draw and explain GSM architecture.	**07**
	(b)	Explain Security issues and challenges in a Wireless network	**07**

OR

Q.5	**(a)**	Explain CDMA forward channel.	**07**
	(b)	Discuss step by step signal processing in GSM.	**07**

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