Register Number:……..

KUMARAGURU
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B.E DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Seventh Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U18ECT7002: Wireless Communication

COURSE OUTCOMES

CO1: Compare various Wireless communication standards
CO2: Analyze different propagation models
CO3: Illustrate cellular communication techniques
CO4: Analyze modulation schemes used in wireless standards
CO5: Compare diversity techniques in wireless communication
CO6: Distinguish different MIMO techniques

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Compare wireless LAN with Wired LAN.	CO1	[K_2]
2.	List third generation wireless standards.	CO1	[K_1]
3.	Name the factors that influence small signal fading.	CO2	[K_1]
4.	List the basic propagation mechanisms.	CO2	[K_2]
5.	Find the Fraunhofer distance for an antenna with maximum dimension of 1m and operating frequency of 900 MHz.	CO3	[K_2]
6.	What is grade of service?	CO3	[K_1]
7.	Compare MSK with GMSK.	CO4	[K_2]
8.	Define power efficiency.	CO4	[K_2]
9.	Name different space diversity techniques.	CO5	[K_1]
10.	Define ergodic capacity.	CO5	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Explain with neat sketch wireless LAN.	8	CO1	[K_2]
	b)	Compare the features of various wireless cellular systems.	8	CO1	[K_2]

12.	a)	Obtain the pathloss expression for the two-ray ground reflection model.	8	CO2	[K_4]
	b)	Explain the fading effects due to multipath time delays spread and fading effects due to doppler spread.	8	CO2	[K_2]
13.	a)	Summarize the features of various multiple access techniques used in wireless mobile communication. State the advantages and disadvantages of each technique.	8	CO3	[K_2]
	b)	Explain about co-channel interference and adjacent channel interference. Describe the technique to avoid interference.	8	CO3	[K_2]
14.	a)	Find the 3-dB bandwidth for a Gaussian low pass filter to produce 0.25 GMSK with a channel data rate of Rb=300 kbps.	4	CO4	[K_3]
	b)	Explain the principle of $\pi/4$ Differential QPSK with signal space diagram.	12	CO4	[K_2]
15.	a)	Illustrate in detail about MIMO system model.	8	CO6	[K_2]
	b)	Derive the channel state information in wireless system.	8	CO6	[K_3]
16.		Describe and analyze in detail about spatial diversity techniques.	16	CO5	[K_4]

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