

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Semester: VII

Branch: Telecommunication Engineering

Duration: 3 hrs.

Course Code: 16TE7DCWCM

Max Marks: 100

Course: Wireless Communication

Date: 20.02.2023

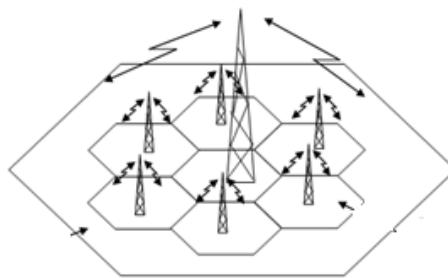
Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a)	With a neat diagram, describe wide area paging system. Why paging transmitters are usually located on tall buildings in the center of a city	08
	b)	Illustrate with a neat diagram working of a cordless telephone system	06
	c)	Briefly explain 3G CDMA 2000	06

OR

2	a)	Explain the channel assignment strategies for efficient utilization of the radio spectrum	08
	b)	What are the different methods for giving priority to handoffs? Explain	06
	c)	Analyze the diagram shown in the fig below and mention its advantages	06



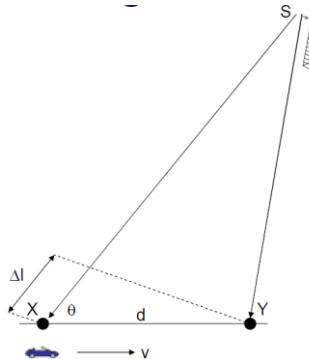
UNIT - II

3	a)	With necessary equations, explain two ray ground reflection model	08
	b)	Explain three basic propagation mechanisms	06
	c)	If a transmitter produces 50W of power, express the transmit power in units of (a) dBm and (b) dBW. If 50 W is applied to a unity gain antenna with a 900 MHz carrier frequency, find the received power in dBm at a free space distance of 100 m from the antenna. What is $P_r(10\text{km})$? Assume unity gain for the receiver antenna.	06

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - III

4 a) Explain the fading effects due to Doppler spread **08**
b) Briefly describe the significance of 50% coherence bandwidth **06**
c) For the given figure, derive the relation between Doppler shift and the angle **06**



UNIT-4

5 a) Explain the architecture of a GSM network with a neat diagram **08**
b) Explain the elements and responsibilities of OSS **06**
c) Illustrate with a neat diagram assignment of time slots in the uplink and downlink **06**

OR

6 a) Explain the **Supplementary Services** provided by GSM **08**
b) What is the role of SIM in wireless networks? What are the contents saved in it? **06**
c) Explain the Structure of a timeslot in GSM communication with a neat diagram **06**

UNIT 5

7 a) Explain power control in CDMA system **08**
b) Explain the need for Pilot Channels in CDMA **06**
c) List the information provided by paging channel in CDMA **06**
