

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

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Branch: Telecommunication Engineering

Course Code: 16TE7DCWCM

Course: Wireless Communication

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Date: 20.02.2023

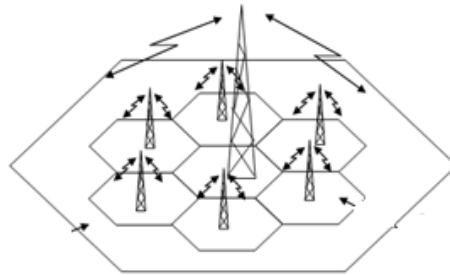
- Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

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**



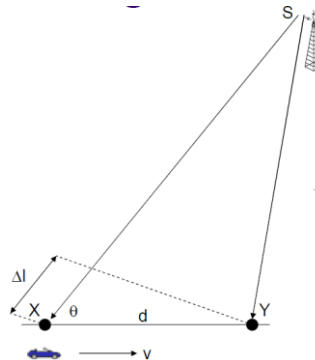
UNIT - II

- 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**
