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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: Institutional Elective

Duration: 3 hrs.

Course Code: 19EC7OE2MC

Max Marks: 100

Course: Fundamentals of Mobile Communications

Date: 22.02.2023

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) Based on range and number of users how are wireless networks classified.	08
	b) Distinguish between TDMA, CDMA and FDMA.	06
	c) Discuss the differences between 2G and 3G technologies.	06

UNIT - II

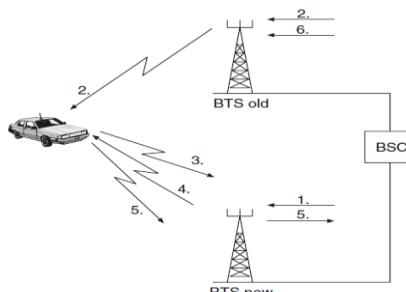
2	a) With a neat diagram, explain cellular system and mention important entities.	08
	b) Discuss the channel assignment strategies in cellular communication with their features.	06
	c) If a total of 25 MHz of bandwidth is allocated to a particular FDD cellular system which uses 25 kHz pairs, compute the number of channels available per cell if a system uses 1)7 cell reuse 2)12 cell reuse	06

UNIT - III

3	a) Discuss the identification numbers used in GSM network and indicate their use.	08
	b) Explain the Base station subsystem with its functionalities.	06
	c) Discuss the frame structure in GSM.	06

OR

4	a) Identify the type of handover in the fig. shown below and analyze the steps for handover.	08
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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.

b) Discuss the function of Home Location Register. What is the need for Visitor location Register in GSM? Discuss with an example. **06**

c) With a neat diagram, discuss GSM frame structure. **06**

UNIT - IV

5 a) List all functional entities in mobile IP and write their function. **08**

b) List the features and applications of Ultra Wide band WPAN standard. **06**

c) Discuss the features of LTE and draw its network architecture. **06**

OR

6 a) List the advantages and disadvantages of mobile IP. **06**

b) With a neat diagram, discuss the three main elements of UMTS network architecture. **08**

c) Explain with a neat diagram, the components of a Wireless Sensor network. **06**

UNIT - V

7 a) Discuss the emerging mobile commerce applications. **08**

b) Discuss with a neat diagram, framework for m-commerce. **06**

c) Discuss the interesting research issues in mobile commerce. **06**
