

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

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Branch: Institutional Elective

Course Code: 19EC7OE2MC

Course: Fundamentals of Mobile Communications

Semester: VII

Duration: 3 hrs.

Max Marks: 100

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

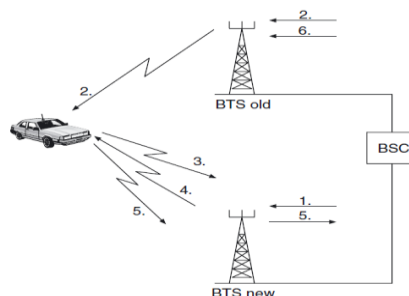
- 2 a) With a neat diagram, explain cellular system and mention important entities. **08**
- b) Discuss the channel assignment strategies in cellular communication with their features. **06**
- c) If a total of 25 MHz of bandwidth is allocated to a particular FDD cellular system which uses 25 kHz pairs, 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**



- 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**
