

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Winter, 2019 - 20 Examination

Semester: 5
Subject Code: 03107346
Subject Name: Mobile Communication

Date: 12/12/2019
Time: 10:30 am to 01:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark)**(15)**

1. The cell having the same number in the adjacent cluster using the same set of RF channels are termed as
 - a. Adjacent cell
 - b. Co channel cell
 - c. Macro cell
 - d. Selective cell
2. MIN stands for
 - a. Mobility In Network
 - b. Mobile Identification Number
 - c. Mobile Internet
 - d. None of the above
3. Actual radio coverage of a cell is called as _____
4. Paging systems were based on
 - a. Simplex systems
 - b. Half duplex systems
 - c. Full duplex systems
 - d. None of the above
5. Process of transferring the call to the new base station is _____
6. Which type of handoff used in CDMA?
 - a. Soft handoff
 - b. Hard handoff
 - c. Soft & hard handoff
 - d. None of the above
7. Full form of IMEI _____
8. A mobile station which operates in a service area other than that from which service has been subscribed is _____
9. Full form of GPRS _____
10. What is Forward channel?
11. _____ type of Modulation used in AMPS Advanced Mobile Phone System (AMPS) .
12. Full form of SIM _____
13. What is Reverse channel?
14. What is Cluster?
15. The cell having the same number in the adjacent cluster using the same set of RF channels are termed as
 - a. Adjacent cell
 - b. Co channel cell
 - c. Macro cell
 - d. Selective cell

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Compare TDMA, FDMA and CDMA Technology for cellular systems

B) A Spectrum of 33 MHz is allocated to a wireless FDD Cellular system which uses two 25 KHz simplex channels to provide full duplex voice and control channels , compute the number of channels available per cell if a system uses (a) four-cell reuse, (b) seven-cell reuse and (12) 12-Cell reuse.

If 1 MHz of the allocated spectrum is dedicated to control channels. Determine and equitable distribution of control channels and voice channels in each cell for each of the three system.

Also explain What are the advantages of frequency reuse concept?

C) Explain: (1) Co-channel interference (2) handoff (3) Dwell time (4) Control channel
(5) Base station

D) Explain the concept of Cell splitting, Sectoring & Umbrella cell. in detail with figure.

Q.3 A) Explain GSM Architecture with block diagram. **(07)**

B) Explain in detail about the various types of channel used in GSM. **(08)**

OR

B) Explain call flow and location update in GSM System with figure **(08)**

Q.4 A) What is LTE. Explain in detail 4G- LTE and 5G Standard. **(07)**

OR

A) Explain in detail the operation of CDMA 2000 cellular technology with its key features. **(07)**

B) Explain in details Wi-fi. And Wi-MAX. **(08)**