

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Summer 2018 - 19 Examination**

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

**Date: 20/05/2019**  
**Time: 10:30 am to 1.00 pm**  
**Total Marks: 60**

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**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 IEEE 802.11b standard is also known as \_\_\_\_\_.
2. Bluetooth operated in the \_\_\_\_\_ ISM Frequency Band.
3. \_\_\_\_\_ type of handoff used in CDMA.
4. The cell having the same number in the adjacent cluster using the same set of RF channels are termed as \_\_\_\_\_.
5. \_\_\_\_\_ is the process of subdividing congested cells into smaller cells.
6. The interference between the neighboring base stations is avoided by
  - a. Assigning different group of channels
  - b. Using transmitters with different power level
  - c. Using different antennas
  - d. All of the above
7. What is the function of FVC (Forward Voice Channel)?
  - a. Voice transmission from base station to mobiles
  - b. Voice transmission from mobile to base station
  - c. Initiating mobile calls
  - d. Broadcast all traffic request for all mobile
8. Paging systems were based on
  - a. Simplex systems
  - b. Half duplex systems
  - c. Full duplex systems
  - d. None of the above
9. The advantage of using frequency reuse is
  - a. Increased capacity
  - b. Limited spectrum is required
  - c. Same spectrum may be allocated to other network
  - d. All of the above
10. The shape of the cellular region for maximum radio coverage is
  - a. Circular
  - b. Square
  - c. Oval
  - d. Hexagon
11. Define simplex systems.
12. Define handoff.
13. Define Base Station..
14. Define Cell dragging.
15. Define Control channel.

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

- A) Explain Bluetooth and Personal Area Networks.
- B) Explain the concept of Umbrella cell.
- C) Briefly Describe Hand-off strategies in cellular system. Compare soft and hard Hand-off.
- D) How co-channel interference and system capacity are related?

- Q.3** A) Explain in detail the operation of CDMA cellular technology. (07)
- B) Briefly Describe the functions of the following for GSM Systems. (08)  
i. MSC ii. VLR iii. HLR iv. AUC v. EIR.
- OR**
- B) Briefly explain GSM logical channels. (08)
- Q.4** A) Explain in detail TDMA with its key features. (07)
- OR**
- A) Explain the CSMA protocol in detail. (07)
- B) (i) Explain in details Wi Max technologies. (08)  
(ii) Explain concept of Cognitive radio