



C14-EC-604

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**BOARD DIPLOMA EXAMINATION, (C-14)**  
**OCT/NOV—2018**  
**DCE—SIXTH SEMESTER EXAMINATION**  
**MOBILE COMMUNICATION**

*Time* : 3 hours ]

[ *Total Marks* : 80

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the terms mobile station and base station.
2. List various channels in mobile communication.
3. State the need for cellular concept in mobile communication.
4. Define umbrella cell.
5. Define multiple access technique and state its types.
6. What are the advantages of CDMA?
7. List the specifications of AMPS.
8. List the service aspects of GSM.
9. List the features of EDGE.
10. Draw the architecture of DECT.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** (a) Define simplex and full duplex channels. 3  
(b) Explain the process of call progress in a cellular telephone system. 7
- 12.** (a) Explain the concept of frequency reuse. 4  
(b) Given a cellular system with total bandwidth of 33 MHz which uses two 25 kHz simplex channels to provide full duplex voice and control channels. Assume that the system uses a twelve cell reuse pattern and 3 MHz of the total bandwidth is allocated for control channels.  
(i) Calculate the total available channels.  
(ii) Determine the number of control channels.  
(iii) Determine the number of voice channels per cell. 6
- 13.** (a) Explain the capacity of a cellular system. 6  
(b) Explain cell splitting and sectoring in cellular system. 4
- 14.** Explain the Frequency Hopped Spread Spectrum (FHSS) multiple access technique. 10
- 15.** (a) List the features of TDMA. 2  
(b) Explain Time Division Multiple Access (TDMA). 8
- 16.** Explain the GSM architecture with block diagram. 10
- 17.** (a) Explain frame structure of GSM. 6  
(b) State the features of narrowband AMPS. 4
- 18.** (a) Compare the features of GSM, GPRS and EDGE systems. 5  
(b) Explain the basic concept of Wireless Local Loop (WLL). 5

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