

22533

23242

3 Hours / 70 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) List the sensors used in mobile phone unit. (any 4)
 - b) Define channel capacity of cellular system. Write formulae to find channel capacity.
 - c) Write reasons for choosing hexagonal cells in cellular system.
 - d) State the Bandwidth requirement for
 - i) WCDMA
 - ii) CDMA-2000
 - e) Compare between IEEE 802.16 and IEEE 802.11 (any two points).
 - f) Define following components:
 - i) MSC/MTSO
 - ii) Base Station
 - g) State any four applications of Bluetooth.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) State examples of wireless commⁿ system. Explain working of cordless system with block diagram.
 - b) Draw a neat labelled diagram of GSM architecture and explain how it works.
 - c) Write a note on LTE Network and compare it with VOLTE standard.
 - d) List types of Handoff? Explain umbrella Cell approach with neat sketch.
- 3. Attempt any THREE of the following: 12**
- a) Compare Dynamic Channel Assignment over fixed channel Assignment method based on its advantages.
 - b) State advantages of CDMA-2000 over 3G-GSM.
 - c) State the vision and services of IMT2000 with it's spectrum requirement.
 - d) Draw the system architecture of IEEE-802.11 std. Also, write down its features.
- 4. Attempt any THREE of the following: 12**
- a) Give classification of GSM channels and explain the function of control channels.
 - b) Describe the call making procedure from mobile handset to landline phone unit (PSTN).
 - c) Explain authentication process in GSM using any Algorithm with suitable diagram.
 - d) Define RFID? Give classification of RFID tags. Write applications of RFID.
 - e) Compare IS-95, WCDMA and CDMA-2000 with respect to:
 - i) Chip rate
 - ii) Modulation Schemes
 - iii) Data rate
 - iv) Frame size.

5. Attempt any TWO of the following: 12

- Draw function of mobile phone unit. State function of each block.
- Illustrate SS7 Protocol architecture with labelled diagram also state the service offered by SS-7 system.
- List capacity improvement methods for cellular system. "Microcell Zone Concept" helps in improving capacity of a cellular system, justify your answer.

6. Attempt any TWO of the following: 12

- Name the block diagram shown in figure:
 - Identify the block diagram.
 - Identify the block "A" and "B"
 - State the function of block "A" and "B"

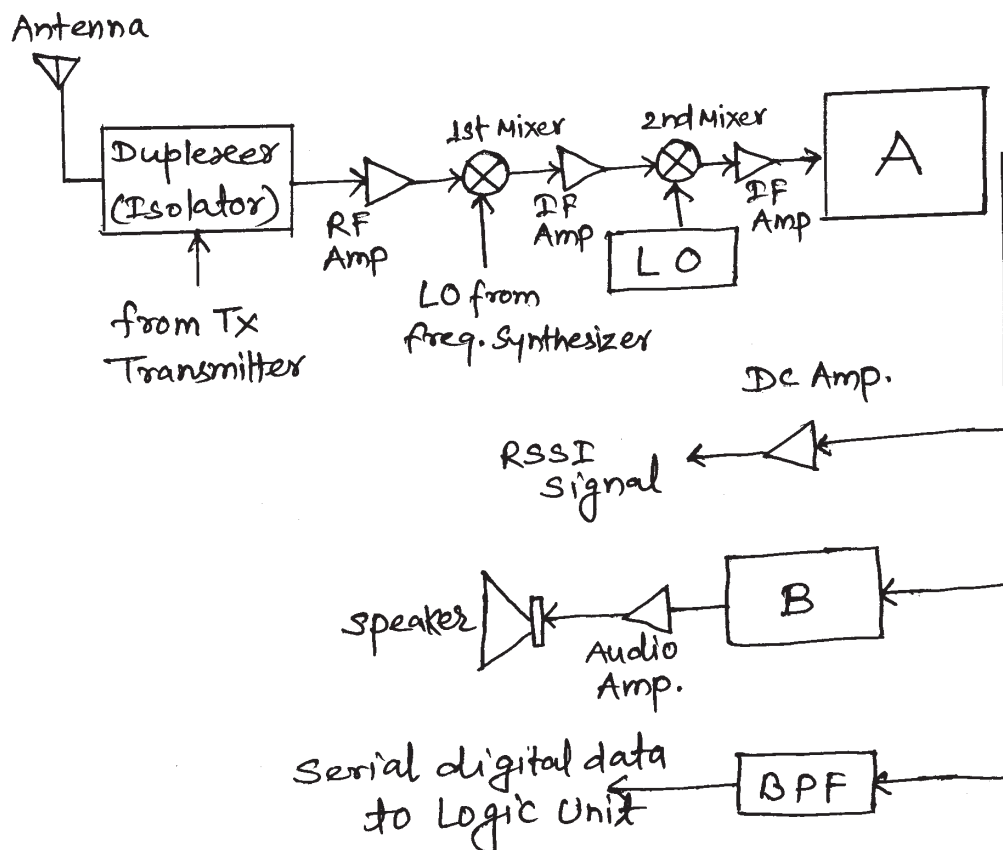


Fig. No. 1

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[4]

Marks

- b) Describe the concept of Ad-hoc mobile communication (MANET) and write its application.
 - c) Explain UMTS network architecture. List important features of UMTS interface. Support your answer with neat block diagram.
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