

22533

12425

03 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

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|-----------|--|-----------|
| <b>1.</b> | <b>Attempt any <u>FIVE</u> of the following</b>  | <b>10</b> |
|           | <ol style="list-style-type: none"><li>a) Sketch neat block diagram of paging system.</li><li>b) List types of Hand off.</li><li>c) Define Co-channel and Adjacent channel Interference</li><li>d) List two features of 4G - LTE.</li><li>e) State two features of CDMA - 2000</li><li>f) Draw the architecture of Bluetooth technology.</li><li>g) List two applications of WLAN technology.</li></ol> |           |

P.T.O.

**2. Attempt any THREE of the following****12**

- a) Define the following terms
  - i) Cell
  - ii) Mobile Switching Center
  - iii) Cluster
  - iv) Base Station
- b) Explain the concept of Microcell zone with diagram.
- c) Compare between GSM and IS-95 standards with following parameters (Any 4 - points)
  - i) Forward Channel Frequency
  - ii) Channel Bandwidth
  - iii) Multiple Access
  - iv) SIM card
  - v) Hand-off
  - vi) Modulation
- d) “For video conferencing which generation of mobile communication is best suited?” Justify the answer with proper reasoning.

**3. Attempt any THREE of the following****12**

- a) State the types of Interference in cellular system. Explain any one type in detail.
- b) Explain the architecture of UMTS with neat sketch.
- c) “For covering large area, Wi-MAX is used compared to WLAN.” Justify the answer with the help of advantages of Wi-MAX
- d) Explain WCDMA with the help of diagram.

**4. Attempt any THREE of the following** **12**

- a) Draw and explain signaling system SS7? State services offered by SS7 system.
- b) CDMA-2000 is more advantageous over 3G GSM standards. Justify.
- c) Explain Mobile originated call procedure with the help of diagram.
- d) Describe MANET and write applications of MANET.
- e) Explain Authentication process by using cipher key generation in GSM with neat sketch.

**5. Attempt any TWO of the following** **12**

- a) Explain LMDS with neat diagram.
- b) Design the frequency reuse pattern for Cluster size
  - i)  $N = 7$
  - ii)  $N = 4$
- c) Draw neat labeled diagram of GSM architecture and explain the function of following blocks.
  - i) Operation and maintenance system.
  - ii) Visitors location Register.
  - iii) Home location Register

6. Attempt any TWO of the following

12

- a) Identify the block diagram in Figure 1 and explain the function of each block.

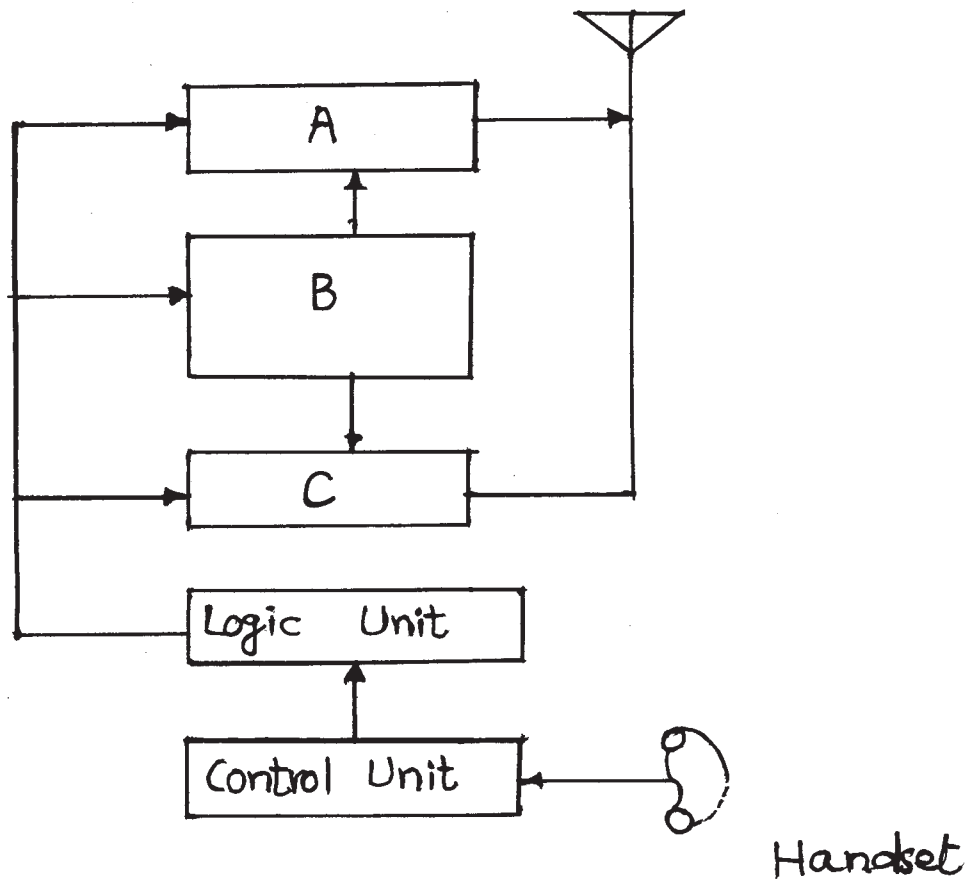


Fig. No. 1

- b) State the features of UMTS and give UMTS air interface specification.
- c) Inlist the classification of RFID tags and give the application of RFID.
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