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22622

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3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

- 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) Define the term
- i) Routing area
- ii) Location area
- b) State the processes involved in the use of RFID in student attendance in a college.
- c) State two features of 5G technology.
- d) Classify Clustering algorithm.
- e) Define the term LEC (Local Exchange Carrier).
- f) State two applications of MANET.
- g) State two specifications of IMT 2000.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Draw the block diagram of the architecture of PCS (Personal Communication Services) and explain.
 - b) Explain the functions performed by GPRS support nodes.
 - c) Draw the WAP protocol stack and state the functions of any four protocols.
 - d) Draw the block schematic of WLL architecture and explain.
- 3. Attempt any THREE of the following:** **12**
- a) Compare the features of 3G and 4G.
 - b) Explain the Quality of service parameters of GPRS.
 - c) Encode the datastream 1011000101 using the following techniques
 - i) RZ-Bipolar
 - ii) AMI
 - iii) Manchester
 - iv) NRZ-unipolar
 - d) Draw the architecture of WSN and explain.
- 4. Attempt any THREE of the following:** **12**
- a) Draw the architecture of UMTS and explain.
 - b) Compare GSM networks with GPRS networks.
 - c) Explain the energy constraints in sensor nodes in WSN and name the protocols to design energy efficiency in WSN.
 - d) Explain the Logical channels in a GPRS system in short.
 - e) Draw the MANET Topology and explain. State two applications of MANET.

- 5. Attempt any TWO of the following:** **12**
- a) Explain location update procedure for a inter LA movement in GSM with suitable diagram.
 - b) Explain the principle of working of ASK and BPSK with suitable waveforms for the bit sequence 110101100.
 - c) Draw the architecture of 4G and explain.
- 6. Attempt any TWO of the following:** **12**
- a) Explain the Network signaling and radio interfaces in GSM.
 - b) Draw the block diagram of a sensor node in WSN and state the function of various components.
 - c) Compare WCDMA and CDMA 2000 on the basis of channel Bandwidth, Chip rate, Duplex mode, Modulation, Frame length and Power Control rate.
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