

# 22414

**12223**

**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) 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**

- 1. Attempt any FIVE of the following: **10****
- Name the components of data communication.
  - State any two needs of Computer Network.
  - Compare guided and unguided transmission media.
  - Enlist types of errors.
  - Compare LRC and VRC.
  - State the function of repeater and modem.
  - State the services of transport layer in OSI model.

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- 2. Attempt any THREE of the following:** **12**
- a) Compare LAN and WAN (four points).
  - b) Explain TDM technique with the help of neat diagram.
  - c) State features of various mobile generations.
  - d) Draw and explain TCP/IP protocol suite.
- 3. Attempt any THREE of the following:** **12**
- a) Explain with neat diagram working of circuit switching in Network.
  - b) Describe the various modes of communication in Computer Network.
  - c) Differentiate between HUB and switch with respect to Layer, Port, device type, speed.
  - d) State the OSI models Layer and give its functions.
- 4. Attempt any THREE of the following:** **12**
- a) State the physical and transmission characteristic of twisted pair cable along with its applications.
  - b) Describe various IP address classes with suitable example.
  - c) Define multiplexing compare FDM and TDM.
  - d) Compare IPv<sub>4</sub> and IPv<sub>6</sub>.
  - e) Draw the architecture of bluetooth and explain.
- 5. Attempt any TWO of the following:** **12**
- a) Explain with diagram the process of client-server and peer to peer network architecture.
  - b) Draw the neat sketch of fiber optical cable. Give the transmission characteristics of fiber optical cable. State its applications.
  - c) Describe the terms with suitable example –
    - i) Subnetting
    - ii) Supernetting
    - iii) Masking.

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**Marks**

**6. Attempt any TWO of the following:**

**12**

- a) Draw the architecture of wireless LAN 802.11 and explain.
  - b) Describe procedure to configure TCP/IP network layer services.
  - c) Explain with the neat sketch the working of Router and switch.
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