

# 22414

**12425**

**03 Hours / 70 Marks**

Seat No. 

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Illustrate your answers with neat sketches wherever necessary.  
(3) Figures to the right indicate full marks.  
(4) Assume suitable data, if necessary.  
(5) 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) State benefits of computer network.
  - b) Classify computer network based on geography.
  - c) Draw neat diagram of UTP cable.
  - d) Define error. List types of errors.
  - e) Compare LRC and VRC (any Two points)
  - f) Define Network topology. State types of topologies.
  - g) Define:
    - i) Data Encapsulation
    - ii) Subnet

P.T.O.

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

- a) Define Following terms:
  - i) Protocol
  - ii) Bandwidth
  - iii) Baud rate
  - iv) Computer Network
- b) Draw and explain Fiber Optic cable with its types.
- c) Explain Bluetooth architecture with neat diagram.
- d) Explain classes of IPv4 address with it's range.

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

- a) Define multiplexing. Explain Frequency Division multiplexing with neat diagram.
- b) State and explain modes of communication with neat diagram.
- c) Describe working of router with neat diagram. Explain types of routers.
- d) State the layers at which the following protocol work:
  - i) SLIP
  - ii) IP
  - iii) SMTP
  - iv) UDP

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

- a) Compare twisted pair cable, coaxial cable and optical fiber cable.
- b) With suitable diagram describe TCP/IP Reference model.
- c) Describe satellite communication with neat diagram.
- d) Compare IPv4 and IPv6.
- e) Demonstrate working of CRC with example.

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

- a) Compare peer to peer network and Client server network.
- b) Describe working Principle of packet switching and circuit switching techniques with neat diagram.
- c) Compare OSI Reference model and TCP/IP Reference model.

**6. Attempt any TWO of the following :** **12**

- a) Describe following terms:
    - i) Wireless LAN
    - ii) Mobile Generations
  - b) Explain functions of Physical layer and Presentation layer of OSI reference model.
  - c) With Suitable diagram describe:
    - i) Star Topology
    - ii) Bus Topology
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