

**2010***Time : 3 hours**Full Marks : 80*

*Candidates are required to give their answers in their own words as far as practicable.*

*The questions are of equal value.*

*Answer any five questions, in which*

*Q. No. 1 is compulsory.*

1. Indicate the correct answer :
  - (a) Which among the following is the physical path over which a message travels ?
    - (i) Protocols
    - (ii) Medium
    - (iii) Signals
    - (iv) None of the above
  - (b) Bits are transferred serially in \_\_\_\_\_.
    - (i) Synchronous transmission
    - (ii) Asynchronous transmission
    - (iii) Both (i) & (ii)
    - (iv) None of the above

- (c) Which conversion type involves modulation of a signal ?
- (i) Digital to digital Conversion
  - (ii) Analog to digital Conversion
  - (iii) Digital to analog Conversion
  - (iv) All of the above
- (d) Twisted pair wire can accommodate a maximum data rate of \_\_\_\_\_ .
- (i) 2400 bps                      (ii) 4800 bps
  - (iii) 9600 bps                      (iv) 19200 bps
- (e) Which among the following can support highest rates of data transmission ?
- (i) Step index multimode fiber
  - (ii) Graded index multimode fiber
  - (iii) Coaxial cable
  - (iv) Single mode fiber
- (f) The sharing of a medium and its path by two or more devices is called \_\_\_\_\_ .
- (i) Modulation                      (ii) Encoding
  - (iii) Life discipline                      (iv) Multiplexing

- (g) Which among the following type of switching uses the entire capacity of a dedicated link ?
- (i) Circuit Switching
  - (ii) Datagram Packet Switching
  - (iii) Virtual Circuit Packet Switching
  - (iv) Message Switching
- (h) Which among the following network topology each device has a dedicated point to point link only to a central controller ?
- (i) Bus
  - (ii) Tree
  - ✓(iii) Mesh
  - (iv) Star
2. Differentiate between Analog and Digital transmission of data and its uses for data Communications in detail.
3. What is the full abbreviation of ATM and then discuss about the ATM. Also describe the format and transmission of ATM cell.
- 4/ Differentiate among simplex, half duplex and full duplex modes of data transmission. A full duplex

line is faster, since it avoids the delay that occurs in a half duplex circuit — explain. Which mode of data transmission is suitable for communication between a terminal and a computer ?

- ✓5. What do you mean by OSI model ? Describe the different layers of OSI model with services provided at each layer.
6. What do you understand by data encoding ? What are the different techniques of data encoding ?
- ✓7. What is LAN, WAN and MAN ? What are its main objectives ? Explain CSMA/CD and token passing techniques of accessing LAN.
- ✓8. What is Multiplexing ? Explain the two basic methods of multiplexing.
9. Write short notes on any two of the following :
  - (a) Communication Satellite
  - (b) TCP/IP
  - (c) Modem
  - (d) Ethernet

