

2019

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 **five** questions in which*

*Q. No. 1 is compulsory.*

1. Choose the correct alternative of the following :

(a) In fiber optics, the signal source is :

- (i) Light wave
- (ii) Radio wave
- (iii) Infrared wave
- (iv) Very low frequency

(b) Which topology requires a central controller  
or hub ?

- (i) Mesh
- (ii) Star

(Turn over)

- (iii) Bus
  - (iv) Ring
- (c) Which is the physical path over which a message travels ?
- (i) Protocol
  - (ii) Medium
  - (iii) Signals
  - (iv) All of these.
- (d) In which transmission mode, the channel capacity is shared by both communicating device at all times ?
- (i) Simplex
  - (ii) Half-duplex
  - (iii) Full-duplex
  - (iv) None of these
- (e) Which type of multiplexing has multiple paths ?
- (i) FDM
  - (ii) Asynchronous TDM
  - (iii) Sychronous TDM
  - (iv) Inverse multiplexing

- (f) The PSTN is an example of a :
- (i) Pack-switched network
  - (ii) Circuit-switched network
  - (iii) Message-switched network
  - (iv) None of these
- (g) The sharing of a medium and its path by two or more device is called :
- (i) Modulation
  - (ii) Encoding
  - (iii) Line discipline
  - (iv) Multiplexing
- (h) Modem converts the :
- (i) Analog signal to digital signal
  - (ii) Digital signal to analog signal
  - (iii) Both (i) and (ii)
  - (iv) None of these

2. What do you understand by computer Networking ? Describe about the objective of a Computer Network.
3. What do you mean by data-transmission ? What are the different types of transmission media ? Explain.

4. Explain the OSI reference model ? Write the function of each layer of OSI model.
  5. (a) Name the factors that affect the security of a network.  
(b) What is the advantages of optical fiber over twisted pair and coaxial cable ?
  6. Discuss the difference between communication and transmission. What are the three main function of the data link layer ? Explain in shout.
  7. What is the function of Bridge ? Explain the difference between single bridge and a transparent bridge.
  8. What are the three major multiplexing technique ? Explain.
  9. Write short notes on any four of the following :

    - (a) Internetworking
    - (b) Ethernet
    - (c) TDM and its type
    - (d) Modem
    - (e) Email
    - (f) Frame relay
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