

Seat No. : _____

N14-108

November-2014

B.C.A., Sem.-V

CC-303 : Data Communication & Networking

Time : 3 Hours]

[Max. Marks : 70

1. (A) (1) What is Data Communication ? Explain the characteristics of it in detail. **4**
(2) What is Protocol ? Explain the characteristics of it. **3**

OR

- (1) Give the difference between Analog Signal and Digital Signal.
(2) Define the following :
(a) Period
(b) Amplifier
(c) Repeater
(B) (1) What is modem ? How it is useful for digital signal, analog transmission ? **4**
(2) Discuss ASK and PSK using suitable example. **3**

OR

- (1) Explain the use of Pulse Code Modulation (PCM) in analog signal, digital transmission.
(2) Explain Simplex, Half-Duplex and Full-Duplex data communication.
2. (A) (1) Explain sliding Window error recovery method in detail. **4**
(2) Give the difference between FDM and TDM. **3**

OR

- (1) Define the following :
(a) Positive Acknowledgement
(b) Last mile
(c) Group
(d) Guard band
(2) Discuss the different types of errors.

- (B) (1) Explain VRC error detection method with suitable example. **4**
 (2) Discuss stop-and-wait error detection method. **3**
- OR**
- (1) Explain checksum error detection method with suitable example.
 (2) Discuss wavelength Division Multiplexing.
3. (A) (1) What is switching ? Discuss Circuit Switching in detail. **4**
 (2) Explain how Cellular Telephone works. **3**
- OR**
- (1) Discuss Twisted Pair with its types in detail.
 (2) Discuss how satellite communication differs from microwave communication.
- (B) (1) Explain Packet Switching with its types in detail. **4**
 (2) Discuss Ring Topologies in detail. **3**
- OR**
- (1) Discuss Tree and Mesh topologies in detail.
 (2) Write a short-note on optical fiber.
4. (A) (1) Discuss Bridge and Router in detail. **4**
 (2) Write a short-note on LAN. **3**
- OR**
- (1) Discuss the OSI model with the functions of each layer.
 (2) Discuss Virtual LAN in detail.
- (B) (1) Discuss Fast and Gigabit Ethernet in detail. **4**
 (2) Discuss the protocol in TCP/IP at different layers. **3**
- OR**
- (1) Write a short note on CSMA/CD.
 (2) Discuss ISDN Architecture.
5. (A) State whether true or false. **7**
- (1) In parallel communication, we can transfer a word or a byte at a time.
 (2) Gateway is used to connect huge and incompatible network.
 (3) In microwave communication, repeaters are used along with antennas to enhance the signal.
 (4) Baud rate is the number of data bits transmitted in one second.
 (5) Delay distortion is caused because the signals at different frequencies travel at different speeds along the medium.
 (6) The mux is responsible for both multiplexing and demultiplexing.
 (7) An Ethernet address is always unique.

(B) Answer the following :

7

- (1) In Token Ring, a special packet containing a _____ goes around the network.
 - (a) data
 - (b) header
 - (c) token
 - (d) bit
- (2) Bluetooth is an example of _____.
 - (a) WAN
 - (b) MAN
 - (c) LAN
 - (d) PAN
- (3) Multiplexing _____.
 - (a) divided one line into multiple channels.
 - (b) combines many channels into one line.
 - (c) is same as modulating.
 - (d) is same as demodulating.
- (4) The de jure standards apply because of _____.
 - (a) conventions
 - (b) agreement
 - (c) regulation
 - (d) choice
- (5) Message switching is also called _____ technique.
 - (a) get and hold
 - (b) store and forward
 - (c) store and release
 - (d) store and never release
- (6) _____ is highly affected by noise.
 - (a) FSK
 - (b) ASK
 - (c) PSK
 - (d) Modulation
- (7) Data compression happens in the _____ layer.
 - (a) physical
 - (b) data link
 - (c) network
 - (d) presentation
