

Seat No. : \_\_\_\_\_

**NL-121**

**November-2017**

**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 Standard ? Explain the categories of it. 3

**OR**

- (1) Give the difference between Analog Signal and Digital Signal.  
(2) Write a short-note on Frequency Shift Keying in modulation technique.  
(b) (1) Explain the use of Pulse Code Modulation (PCM) in analog signal, digital transmission. 4  
(2) Discuss Simplex, Half-Duplex and Full-Duplex data communication. 3

**OR**

- (1) What is Protocol ? Explain the characteristics of it.  
(2) Define the following terms :  
(a) Amplitude  
(b) Bit rate  
(c) Modem.

2. (a) (1) Explain Statistical TDM in detail. 4  
(2) Write a short-note on Error Classification. 3

**OR**

- (1) Explain Cyclic Redundancy Check with suitable example.  
(2) Explain the types of Errors in detail.  
(b) (1) Explain Sliding Window error recovery method in detail. 4  
(2) Discuss the concept of parity checks. 3

**OR**

- (1) Discuss Longitudinal Redundancy Check with example.  
(2) Discuss Go-back-n error recovery method.

3. (a) (1) Discuss Twisted Pair with its types in detail. 4  
 (2) Discuss Bus Topologies in detail. 3
- OR**
- (1) Discuss Mesh and Star topologies in detail.  
 (2) Discuss Message Switching technique in detail.
- (b) (1) Explain Cellular (Mobile) Telephones in detail. 4  
 (2) Explain Co-axial Cable in detail. 3
- OR**
- (1) Discuss Datagram approach and Virtual circuit approach.  
 (2) Write a short-note on Optical Fibre.
4. (a) Discuss OSI network model with all its layers and functions of it. 7
- OR**
- (1) What is Ethernet ? Explain the types of it in detail. 4  
 (2) Write a short-note on CSMA/CD. 3
- (b) What FDDI ? Discuss the properties and operation of FDDI in detail. 7
- OR**
- (1) Discuss ISDN architecture. 4  
 (2) Discuss Virtual LAN in detail. 3
5. Answer the following : 14
- (1) One computer sending a message to another computer over a wire is called \_\_\_\_\_.  
 (a) Transmission medium (b) Modem  
 (c) Transceiver (d) Multiplexer
- (2) \_\_\_\_\_ is used to regenerate the digital signal.  
 (a) Repeater (b) Modem  
 (c) Amplifier (d) None of these
- (3) In \_\_\_\_\_ communication mode, both the devices can transmit data at the same time.  
 (a) Simplex (b) Half-duplex  
 (c) Full-duplex (d) None of these
- (4) The \_\_\_\_\_ is the number of cycles a signal completes in one second.  
 (a) Period (b) Frequency  
 (c) Amplitude (d) Phase

- (5) Multiplexing \_\_\_\_\_.  
 (a) divides one line into multiple channels.  
 (b) combines many channels into one line.  
 (c) is same as demodulating.  
 (d) None of these.
- (6) In \_\_\_\_\_, the medium is divided into a number of channels, each with a frequency bandwidth.  
 (a) FDM (b) TDM  
 (c) WDM (d) STDM
- (7) As a signal travels through any medium, its strength decreases due to \_\_\_\_\_.  
 (a) noise (b) delay distortion  
 (c) attenuation (d) retransmission
- (8) Frequency band used for signal from earth to satellite is known as \_\_\_\_\_.  
 (a) uplink (b) downlink  
 (c) up-downlink (d) None of these
- (9) In case of \_\_\_\_\_, a direct physical connection path is established between two computers.  
 (a) circuit switching (b) message switching  
 (c) packet switching (d) None of these
- (10) In \_\_\_\_\_, if a node fails, the whole network cannot function.  
 (a) tree topology (b) mesh topology  
 (c) ring topology (d) star topology
- (11) NAK is a \_\_\_\_\_ acknowledgement.  
 (a) positive (b) negative  
 (c) neutral (d) None of these
- (12) A transceiver connects a \_\_\_\_\_ to \_\_\_\_\_.  
 (a) Computer, Computer (b) Network, Network  
 (c) Ethernet, Ethernet (d) Computer, Ethernet
- (13) Generally, a \_\_\_\_\_ is used to divide a network into segments.  
 (a) repeater (b) bridge  
 (c) router (d) gateway
- (14) The Infrared communication is an example of \_\_\_\_\_.  
 (a) wireless communication (b) wired communication  
 (c) ethernet (d) None of these

