

Seat No. : _____

NC-112

December-2015

B.C.A. Sem.-V

CC-303 : Data Communications & Networking

Time : 3 Hours]

[Max. Marks : 70

1. (A) (i) What is Protocol ? Explain it's characteristics. **3**
(ii) Difference between Analog Signal and Digital Signal. **4**
- OR**
- (i) Define the following Terms : **4**
(a) Communication
(b) Amplitude
(c) Baud rate
(d) Period
- (ii) What are the different ways of communication ? Differentiate between Simplex, Half duplex, Full Duplex. **3**
- (B) (i) What is Data Communication ? Explain its characteristics. **3**
(ii) Which method is used for Analog Signal Digital Transmission ? Explain with example. **4**
- OR**
- (i) What are the different types of Modulation ? Explain PSK with suitable example. **3**
(ii) Define the following terms : **4**
(a) Frequency
(b) Bandwidth
(c) Amplifier
(d) Phase
2. (A) (i) Explain Multiplexing and De-multiplexing. Differentiate between FDM and TDM. **4**
(ii) Describe classification of Error. **3**
- OR**
- (i) Name the Error Detection Methods. Explain Parity Check Method with example. **4**
(ii) What are the different types of Error Recovery Methods? Explain Go-back-N with example. **3**

- (B) (i) What is Multiplexer ? Explain WDM in detail. 4
(ii) What are the different types of Error ? Explain with example. 3

OR

(i) Explain Checksum method in detail. Calculate checksum for following example : 4
11001000111111100110
(ii) Explain Sliding Window method. 3
3. (A) (i) What are the different Guided Media? Explain Fastest Guided Media. 4
(ii) Explain Circuit Switching in detail. 3

OR

(i) What is Topology ? Name the different Topologies. Differentiate between star and Mesh topology. 4
(ii) Name the different types of Switching. Explain Datagram approach. 3
- (B) (i) What are the different types of Unguided Media? Explain Satellite Communication. 4
(ii) Explain Ring topology. 3

OR

(i) Explain Cellular Communication. 4
(ii) Explain Twisted Pair with its type. 3
4. (A) (i) Discuss the Open System Interconnection in detail. 4
(ii) Explain VLAN. 3

OR

(i) Differentiate between Router and Bridge. 4
(ii) Write short note on Ethernet. 3
- (B) (i) Name the different Channels used in ISDN. Explain ISDN Interface. 4
(ii) Explain CSMA/CD. 3

OR

(i) Explain Piconet and Scatternet. 4
(ii) Write a short note on Access-point. 3
5. (A) Answer the following questions : 7
(1) ISDN use _____ for data transmission.
(a) Digital Pipe (b) Data channel
(c) Ethernet (d) Digital Bit Pipe
- (2) Digital Signals are regenerated by_____.
(a) Amplifier (b) Modem
(c) Repeater (d) Switch

- (3) _____ is an intelligent Multiplexing Technic.
- (a) Synchronous TDM
 - (b) Wavelength Division Multiplexing
 - (c) Statistical TDM
 - (d) Pulse Code Modulation
- (4) _____ is a batter error detection method.
- (a) LRC
 - (b) Checksum
 - (c) CRC
 - (d) VRC
- (5) Microwave Communication works in_____.
- (a) Coaxial Cable
 - (b) Line of Sight
 - (c) Omni direction
 - (d) Fiberoptic cable
- (6) 802.15 stands for_____.
- (a) Wi-max
 - (b) Wi-fi
 - (c) Bluetooth
 - (d) Mobile Network
- (7) _____ helps Ethernet to recover errors occurring through simultaneous transmission.
- (a) Collision
 - (b) DQDB
 - (c) CD
 - (d) CSMA/CD

(B) State weather **true** of **false**.

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- (1) FSK is highly affected by noise.
- (2) Safety band is used so that the signals of two channels do not mingle with each other.
- (3) In parallel communication we transfer a word or byte at a time.
- (4) Optical fibres use refraction to guide the light through the optical fiber.
- (5) FDDI use Second ring for loopback.
- (6) The switch is used at the physical, datalink and network layer of OSI model.
- (7) Bearer Channel is used for signalling and controlling in ISDN.
