



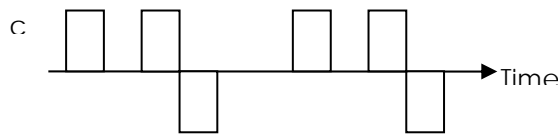
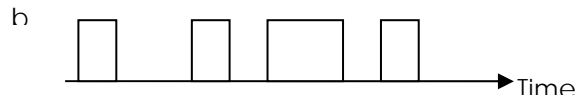
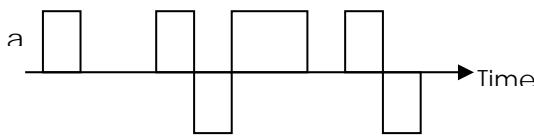
UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA
SECOND SEMESTER EXAMINATIONS, MAY 2018

COURSE NO: CE 374
COURSE NAME: DATA COMM AND COMPUTER NETWORKS
CLASS: CE III **TIME:** 3HRS

Name: _____ Index Number: _____

Answer All Questions in this section in the Answer Booklet

1. Which of the following is a periodic signal?



2. The portion of LAN management software restricts access, records user activities and audits data.

- a. Configuration Management
- b. Performance Management
- c. Security Management
- d. Resource Management

3. _____ is a type of transmission impairment in which the signal loses strength due to the resistance of the transmission medium.

- a. Attenuation
- b. Distortion
- c. Noise
- d. Decibel

4. The signal-to-noise ratio of a channel is 100, what is the value of SNR_{DB} .

- a. 10
- b. 20
- c. 30
- d. 40

5. The data link layer receives packet from the network layer and encapsulates them into

- a. Packets
- b. Trailers

- c. Frames
- d. Cells
6. The IP address of a node can be known using the DOS command
- a. ipconfiguration
- b. ipconfir
- c. ipconfig
- d. ipconfr
7. DHCP stands for
- a. Dynamic Host Configuration Protocol
- b. Dynamic Host Configuration Provider
- c. Dynamic Host Communication Protocol
- d. Dynamic Host Configuration Packets
8. can detect all single-bit errors
- a. Single Parity
- b. Block Parity
- c. CRC
- d. Checksum
9. _____ is a special address for each network that allows communication to all the hosts in that network.
- a. Broadcast Address
- b. Multicast Address
- c. Host Address
- d. Network Address
10. Which protocol layer uses the protocols www, HTTP, FTP, SMTP, email, etc?
- a. Application Layer
- b. Presentation Layer
- c. Transport Layer
- d. Internet Layer
11. In a classful addressing scheme, the network bits for class C is _____.
- a. 21 Bits
- b. 16 Bits
- c. 8 Bits
- d. 24 Bits
12. How many bits are there in a MAC address?
- a. 48 Bits
- b. 128 Bits
- c. 64 Bits
- d. 32 Bits
13. Checksum is used for?
- a. Error Correction
- b. Error Detection
- c. Both A & B
- d. None of the Above
14. is the loss of energy as a signal propagates outwards.
- a. Noise
- b. Attenuation
- c. Decibel
- d. Distortion

15. What is the subnet mask for the IP address 172.110.56.1/18
- a. 255.255.192.0
 - b. 255.255.250.0
 - c. 255.255.0.0
 - d. 255.255.255.0
16. For large networks topology is used.
- a. Bus
 - b. Hybrid
 - c. Star
 - d. Ring
17. Which one of the following task is not carried out in the data link layer?
- a. Flow Control
 - b. Framing
 - c. Error Control
 - d. Channel Coding
18. Network repeater works in the layer of the OSI model.
- a. Physical
 - b. Transport
 - c. Network
 - d. Data Link
19. Which of the following network devices is most suitable for connecting two different networks.
- a. Switch
 - b. Hub
 - c. Repeater
 - d. Router
20. Which error detection method consist of just one redundant bit per data unit.
- a. Simple parity check
 - b. Two-dimensional parity check
 - c. CRC
 - d. Checksum
21. In cyclic redundancy checking, what is CRC?
- a. The divisor
 - b. The quotient
 - c. The dividend
 - d. The remainder
22. Which of the following protocol is an example of the TCP/IP transport layer?
- a. SMTP
 - b. HTTP
 - c. UDP
 - d. IP
23. A distributed network configuration in which data/information passes through a central computer is?
- a. Ring
 - b. Mesh
 - c. Bus
 - d. Star
24. The transmission media with the slowest speed is?
- a. Twisted pair cable
 - b. Coaxial Cable
 - c. Microwave
 - d. Infrared

25. A print server uses a to hold data before it is forwarded for printing.
- a. Queue
 - b. Node
 - c. Buffer
 - d. Ring
26. Under CIDR, an IP address 172.48.16.218 implies the network has been
- a. Subnetted
 - b. Supernetted
 - c. Segmented
 - d. Segregated
27. In a topology, if the computer cable is broken, the entire network goes down.
- a. Bus
 - b. Ring
 - c. Star
 - d. Mesh
28. The commonly used protocol for webpage transfer is referred to as
- a. HTTP
 - b. HTML
 - c. XHTML
 - d. WML
29. What is the maximum data capacity of a shielded twisted pair cable?
- a. 1000 Mbs
 - b. 10 Mbs
 - c. 100 Mbs
 - d. 10000 Mbs
30. What is the port number for HTTP?
- a. 8080
 - b. 80
 - c. 193
 - d. 587
31. The number of oscillations per second of a wave is known as
- a. Wavelength
 - b. Phase
 - c. Frequency
 - d. Period
32. Devices on one network can communicate with devices on another network via.....
- a. Router
 - b. Access Point
 - c. Gateway
 - d. Switch
33. The physical layer is concerned with the transmission of over the physical medium.
- a. Protocols
 - b. Packets
 - c. Bits
 - d. Frames
34. CRC stands for
- a. Cyclic Redundancy Check
 - b. Cyclic Redundancy Code
 - c. Code Redundancy Check
 - d. Cyclic Repeat Code

35. In the OSI model, the dialogue control and token management are responsibilities of the
- a. Session
 - b. Network
 - c. Transport
 - d. Application
36. The third layer of the OSI model is
- a. Physical
 - b. Data link
 - c. Network
 - d. Transport
37. IPv6 has bit addresses
- a. 32
 - b. 128
 - c. 64
 - d. 8
38. In fibre optics, the signal source is waves.
- a. Infrared
 - b. Light
 - c. Very Low frequency
 - d. Radio
39. Which of the following primarily makes use of guided media?
- a. Local Telephone System
 - b. Cellular Telephone system
 - c. Satellite Communication
 - d. Intranet
40. The 4 byte IP address consist of
- a. Network address
 - b. Host address
 - c. Broadcast address
 - d. Both A & B

SECTION B

Answer **ALL** Questions in this Section. Write clearly and neatly.

QUESTION ONE (20 MARKS)

- a) Define network security and explain its significance. (3 marks)
- b) According to ITU recommendation, name **four** basic concepts regarding security. (2 marks)
- c) Define the following computer network security terminologies:
- i. Access Control
 - ii. Network Access Privileges
 - iii. Non-Repudiation
 - iv. Data Integrity
- (4marks)
- d) Differentiate between Passive and Active attacks (2 marks)
- e) Using diagrams, mention **three** physical network topologies, giving **two** advantages and disadvantages of each. **Marks will be awarded for clarity of drawings.** (9 marks)

QUESTION TWO (20 MARKS)

- a. The Open Systems Interconnection (OSI) model is used as a basis for many networks.
- i. Name the layers in the OSI model and describe briefly the function of **each** layer. (7 marks)
 - ii. Show how the layers in the OSI model relate to the corresponding layers in the Internet model (TCP/IP protocol suite). (3 marks)
- b. Name and explain briefly the **three** sources of vulnerability threats. (3 marks)
- c. Describe the levels of addressing based on the TCP/IP protocol suite. (5 marks)
- d. List **one** advantage and disadvantage each for symmetric and asymmetric encryption. (2 marks)

QUESTION THREE (20 MARKS)

a. Given the IP address 195.251.117.155/25.

Find the following;

- i. Network ID
- ii. First host
- iii. Last host
- iv. Broadcast address
- v. Total number of usable for the host
- vi. Total number of subnets for this network

(10 marks)

b. Name and briefly example the elements of a data communication system

(5 marks)

c. Data flow in computer networks is categorized in to 3, briefly explain them with examples

(3 marks)

d. Differentiate between De facto and De jure standards and give 2 examples of each.

(2 marks)

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