CHAPTER - 10 COMPUTER NETWORK

1. **Which of the following describes a computer network?**
a. A system used to broadcast data
b. A system for printing documents
c. An interconnection between two or more computers or computing devices
d. A system for receiving data packets

2. **Which of the following best defines a Local Area Network**?
a. A network that connects devices across countries or continents
b. A network that connects devices within a limited geographical area such as a room, building, or campus
c. A global collection of interlinked web pages
d. A wireless network only for mobile phones

3. **The IEEE assigned number for wireless LAN is**
a. IEEE 802.3
b. IEEE 802.5
c. IEEE 802.15
d. IEEE 802.11

4. Which media/technology is commonly used for LAN connectivity?
a. Satellite links
b. Ethernet cables and Wi-Fi
c. Undersea fiber-optic trunk lines
d. Cellular 4G/5G towers

5. **The protocol introduced as standard protocol on ARPANET is**
a. TCP/IP
b. HTTP
c. FTP
d. PPP

6. **What is the typical maximum range a LAN can be extended to, as mentioned in the passage?**
a. 10 metres
b. 100 metres
c. 1 kilometre
d. 100 kilometres

7. **The network connects devices like laptops, smartphones, printers, smartphones, mobile phones of individuals is**
a. LAN
b. PAN
c. WAN
d. MAN

8. **Which of the following networks connects devices within a limited distance?**
a. PAN
b. MAN
c. WAN
d. LAN

9. **The network which offers high data transfer rates from 10 Mbps to 1000 Mbps is**
a. WAN
b. PAN
c. LAN
d. MAN

10. **The network covers a larger geographical area like a city or town.**
a. WAN
b. LAN
c. PAN
d. MAN
11. **Which of the following is an example of a Metropolitan Area Network ?**
a. A home Wi-Fi setup
b. A university campus network
c. A city-wide cable TV network
d. A Bluetooth connection between devices
12. **The network connects computers and other networks across countries or continents**
a. LAN
b. PAN
c. MAN
d. WAN
13. **The device converts analog signals to digital bits and vice versa is**
a. Switch
b. Modem
c. Router
d. NIC
14. Which of the following data rate ranges corresponds to LAN speeds
a. 56 kbps to 128 kbps
b. 10 Mbps to 1000 Mbps
c. 10 Gbps to 100 Gbps
d. 1 bps to 100 bps
15. **The modulator converts:**
a. Digital signals to analog
b. Analog signals to digital
c. Binary to hexadecimal
d. analog signals to optical signals
16. **The function of the demodulator is**
a. Converting Digital signals to analog
b. Converting binary signals to analog signals
c. Converting Analog signals to digital
d. Sending control signals
17. **Another name for an Ethernet card is**
a. IDE
b. NIC
c. FireWire
d. COM1
18. **Which device is a network adapter used to set up a wired network?**
a. Modem
b. Wi-Fi
c. Bluetooth
d. NIC
19. **Which device acts as an interface between a computer and the network?**
a. Switch
b. Hub
c. NIC

d. Repeater

20. The data rate of Gigabit ethernet is
a. 2048 Mbps
b. 1000 Mbps
c. 512 Mbps
d. 4096 Mbps

21. **The network circuit mounted on the motherboard of a computer is**
a. **NIC**
b. Router
c. Graphics Processing Unit
d. Switch

22. **Which cable connects the computer to the network through NIC?**
a. USB cable
b. HDMI cable
c. Ethernet cable
d. VGA cable

23. **Which device is an eight-pin connector used exclusively with Ethernet cables for networking?**
a. RJ-45
b. USB
c. HDMI
d. VGA

24. **Which device is the standard networking interface seen at the end of all network cables?**
a. RJ-11
b. RJ-45
c. DB-25
d. PS/2

25. **How many pins does an R-J45 connector have?**
a. 24
b. 32
c. 8
d. 16

26. **Which device is an analog device that works with signals on the cables to which it is connected?**
a. Router
b. Hub
c. Repeater
d. Switch

27. **Which device regenerates signals on the cables to which it is connected?**
a. Repeater
b. Modem
c. NIC
d. Gateway

28. **Which device is used to connect different devices through wires in a network?**
a. Repeater
b. Hub
c. Router
d. Modem

29. **Which device connects multiple computers or communicating devices in a network?**
a. **Hub**
b. NIC
c. RJ-45
d. Repeater

30. **Which device receives data, analyzes it, and transmits it to other networks?**
a. Switch
b. **Router**
c. Hub
d. Repeater

31. **The device can analyze data, decide how it is packaged, and send it to another network is the**
a. Hub
b. Switch
c. **Router**
d. Repeater

32. **The device serves as the entry and exit point of a network is the**
a. **Gateway**
b. Switch
c. Hub
d. NIC

33. **Which device maintains information about internal and remote network paths?**
a. Gateway
b. **Router**
c. Repeater
d. Modem

34. **Which of the following refers to the arrangement of computers and peripherals in a network?**
a. Protocol
b. **Topology**
c. Interface
d. Adapter

35. **In which topology is each device connected to every other device in the network?**
a. Ring
b. **Mesh**
c. Star
d. Bus

36. **In which topology is each node connected to two other devices, one on each side?**
a. Star
b. **Ring**
c. Mesh
d. Tree

37. **The link in a ring topology is:**
a. **Unidirectional**
b. Always wireless
c. Only analog
d. Irregular

38. **In which topology does each device connect to a transmission medium?**
a. Star

b. **Bus**

c. Ring

d. Mesh

39. **In which topology is each device connected to a central node?**

a. Ring

b. **Star**

c. Bus

d. Mesh

40. **In which topology are there multiple branches, each with one or more basic topologies?**

a. Mesh

b. **Hybrid**

c. Ring

d. Bus

41. **Which of the following is a hierarchical topology?**

a. **Tree**

b. Ring

c. Bus

d. Mesh

42. **Which of the following is a hybrid topology?**

a. Star

b. **Tree**

c. Mesh

d. Star-Bus

43. **Which of the following is a unique value associated with a NIC**

a. IP address

b. **MAC address**

c. Port number

d. Subnet mask

44. **The value is engraved on a NIC at the time of manufacturing and cannot be changed is the**

a. IP address

b. **MAC address**

c. Port number

d. Subnet mask

45. **Which address uniquely identifies each node in a network?**

a. **MAC address**

b. Gateway address

c. DNS address

d. Port number

46. **How many hexadecimal digits are used in a MAC address?**

a. 8

b. 10

c. **12**

d. 16

47. **How many bits are used in an IPv4 address?**

a. **32**

b. 64

c. 128

d. 16

48. How many bits are used in an IPv6 address?
a. 32
b. 64
c. **128**
d. 256

49. Which of the following is an ocean of information stored in trillions of interlinked web pages?
a. Local Area Network
b. **World Wide Web**
c. Intranet
d. File Server

50. Which of the following is used to design standardized web pages readable across devices?
a. MAC
b. **HTML**
c. URL
d. DNS

51. Which of the following is a unique address or path for each web resource?
a. MAC
b. HTML
c. **URL**
d. ISP

52. Which protocol is used to retrieve linked web pages across the web?
a. **HTTP**
b. FTP
c. SMTP
d. TCP

53. What is the full form of MAC?
a. **Media Access Control**
b. Machine Address Code
c. Manual Access Configuration
d. Multi Access Channel

54. What is the full form of HTML?
a. Hyper Test Markup Language
b. High Tech Markup Language
c. **Hyper Text Markup Language**
d. Hyperlink Transfer Markup Language

55. What is the full form of URL?
a. **Uniform Resource Locator**
b. Universal Reference Link
c. Unified Retrieval Language
d. Unique Routing Locator

56. What is the full form of URI?
a. **Uniform Resource Identifier**
b. Universal Resource Interface
c. Unique Reference Identifier
d. Unified Resource Index

57. What is the full form of WWW?

a. **World Wide Web**
b. Wide World Web
c. Web Wide World
d. World Web Wide

58. **What is the full form of DNS?**
a. Domain Navigation Server
b. **Domain Name Server**
c. Digital Naming structure
d. Distributed Name Service

59. **What is the full form of ISP?**
a. Internet Server Protocol
b. Integrated Signal Processor
c. Internet Sharing Platform
d. **Internet Service Provider**

60. **What is the full form of IP?**
a. **Internet Protocol**
b. Internal Path
c. Integrated Port
d. Interlinked Packet

61. **What is the full form of OUI?**
a. **Organizationally Unique Identifier**
b. Online User Interface
c. Open Universal Identifier
d. Operational Unit Index

62. **Which of the following best describes a WPAN?**
a. A network that connects devices across a city using fiber optics
b. **A network connecting personal devices within about 10 meters using technologies like Bluetooth or Wi-Fi Direct**
c. A global network of interlinked web pages accessed via browsers
d. A wired network connecting computers in an office using Ethernet cables(easy)

63. **Why is a LAN considered comparatively secure?**
a. It always uses fibre optics
b. **Only authentic users within the network can access other computers or shared resources**
c. Because it never connects to the internet
d. Because it uses abstract encryption methods.

64. **Which of these is a common advantage of using a LAN in an office or campus?**
a. Unlimited geographic coverage
b. Very low data transfer rates
c. **Ability for users to share printers and upload/download files from a local server**
d. Requirement for manual packet switching for each message.

65. **Ethernet is best defined as:**
a. A type of modem used for long-distance links
b. **A set of rules that defines how devices connect with each other through cables in a LAN**
c. A wireless protocol for PANs
d. A browser for accessing the World Wide Web

66. Which of the following is a typical data rate range for LAN
a. 0.5 Mbps to 2 Mbps

b. **10 Mbps to 1000 Mbps**

c. 10 Gbps to 100 Gbps

d. d. 1000 bps to 10 kbps

67. **Which of the following best describes a Wide Area Network (WAN)?**
   a. A network that connects devices within a single room or building
   b. **A network that connects LANs and MANs across different geographical locations, possibly across countries or continents**
   c. A personal network connecting devices within 10 metres
   d. A network used only for cable TV distribution

68. **Which of the following is the largest example of a WAN?**
   a. A university campus network
   b. A home Wi-Fi network
   c. **The Internet**
   d. A Bluetooth connection between two phones

69. **Which statement is true about how a WAN can be formed?**
   a. By connecting only wireless PANs together
   b. **By connecting a LAN to other LANs via wired or wireless media**
   c. By connecting devices using only USB cables
   d. By connecting two devices using an RJ-45 cable only

70. **Which organizations commonly use WANs to connect branches across different locations?**
   a. Small home users only
   b. **Large businesses, educational institutions, and government organizations**
   c. Single-room offices with one computer
   d. Devices connected by Bluetooth

71. **Which of the following is a typical purpose of a WAN?**
   a. To provide short-range high-speed sharing of a printer within a lab
   b. **To connect different branches of an organization in different cities or countries**
   c. To create a direct wired link between a phone and a laptop
   d. To replace LANs in local classrooms

72. **A company wants to connect its office in Delhi with its branch in Shimla and another branch overseas. Which network type is most appropriate?**
   a. PAN
   b. LAN
   c. MAN
   d. **WAN**

73. **Which of the following correctly describes an IP address?**
   a. A permanent hardware address burned into a network card.
   b. **A unique numeric address used to identify a node on an IP network.**
   c. A protocol for wireless communication
   d. A web page address

74. **An IPv4 address is written as four decimal numbers separated by periods because it is a:**
   a. 16-bit address
   b. 64-bit address
   c. **32-bit address**
   d. 128-bit address

75. Which of the following is a sample IPv4 address format?
   a. 2001:CDBA:0000:0000:0000:0000:3257:9652

b. **192.168.0.178**
c. 10.0.0.0/8
d. 256.300.1.1

76. Why was IPv6 introduced?
   a. To replace Ethernet standards
   b. **To provide a larger address space because IPv4's 32 bits were insufficient.**
   c. To reduce MAC address length
   d. To convert decimal addresses into binary automatically

77. **The network topology where data can be transmitted in only one direction is**
   a. Star
   b. **Ring**
   c. Mesh
   d. Bus

78. **Correct expansion form of HTTP is:**
   a. Hyperlink Text Transmit Protocol
   b. Hyper Transfer Transmission Protocol
   c. **Hyper Text Transfer Protocol**
   d. Hypermedia Transmit Text Protocol

79. **Conversion of the domain name of each web server to its corresponding IP address is**
   a. Network
   b. Domain Name System
   c. URI
   d. **Domain Name Resolution.**

80. **Printing of documents within a building, can be done by using which type of network?**
   a. MAN
   b. WAN
   c. **LAN**
   d. PAN

81. **The device used for conversion between digital and analogue signal is**
   a. **Modem**
   b. Repeater
   c. Router
   d. Switch

82. **The approximate range of personal area networks is**
   a. 14 meters
   b. 5 meters
   c. **10 meters**
   d. 20 meters

Question Carrying 2-Marks

1. Define a computer network. Name one type of computer network.
2. List out any two examples of networks in daily life
3. State one difference between LAN and WAN and give an example.
4. List two benefits of using a computer network in a school setting.
5. State one reason why LAN is considered more secure than other types of networks.
   - **Because access to a LAN is limited to a small geographical area and authorized users only.**
   - **In a LAN, all devices are connected** within a confined area **such as a home, school, or office.**
6. List examples of wired and wireless PAN connections.
   - **Wired PAN Connections:**
     ✓**USB (Universal Serial Bus) — used to connect devices like phones, printers, and cameras to computers.**
     ✓**FireWire (IEEE 1394) — used for connecting digital cameras or external hard drives.**
   - **Wireless PAN Connections:**
     ✓**Bluetooth — connects wireless headsets, keyboards, and mobile phones.**
     ✓**Infrared (IR) — used in TV remotes and some older mobile devices.**
     ✓**Wi-Fi — allows devices to connect directly without cables.**
7. List any two devices connected through Bluetooth - **headsets, keyboards, and mobile phones**
8. Identify any two network devices used for signal regeneration or data forwarding. – **Repeater, Router**
9. Define the terms "node" and "packet" in the context of computer networks
10. What is a node in a computer network? Give one example.
11. Identify two devices that can act as nodes in a computer network and explain their role briefly.
- Computer → **Sends and receives data.**
- Printer → **Performs tasks (like printing) requested by other nodes on the network.**
12. Differentiate between wired and wireless communication media.
13. Describe the function of a hub. State two limitations.
14. List two differences between a hub and a switch.
- Hub sends data to others devices connected to it.
   A switch sends data only to the specific device for which it is intended.
- The limitation of Hub is that if data from two devices come at the same time, they will collide.
   Switch is more efficient as it reduces unnecessary data traffic by directing data properly
15. What does it mean when a router is described as wireless?
   A wireless router is a device that provides internet access to multiple devices without cables, using Wi-Fi (Wireless Fidelity) signals.
   It allows devices such as laptops, smartphones, tablets, printers, and smart TVs to connect to the internet wirelessly.
16. Give one function of a home Wi-Fi router besides providing wireless access.
17. What role does an ISP play as a gateway for a home network
18. Explain the typical bit length of a MAC address.
19. State one advantage and one disadvantage of ring topology.
20. What is the backbone in bus topology- main cable **that carries data between all connected devices.**
21. Give one reason why star topology is considered efficient? - **Each device is directly**

connected with the central device.

22. Why is cabling cost high in mesh networks?

Since each communicating device is connected with every other device in the network.

23. Write a short note on the role of Internet Service Providers

An ISP enables users to access the internet, offers related services like email and web hosting, and ensures smooth and secure data transmission.

Main roles of an ISP:

- Internet Connectivity
- Assigning IP Addresses

24. Write a note on World Wide Web
25. What is HTML and Mention its role in web development.
26. Explain the concept of URI and its importance in web communication.
27. What is URL? Explain.
28. What is an RJ-45 connector? Mention its role.
29. Define a repeater and explain its function in a network.
30. Explain two differences between a MAN and a LAN
31. Describe the primary functions of a network switch and give two features that distinguish it from a hub.
32. Define a router and explain how it differs from a hub or switch
33. How tree topology is different from bus topology?
34. Define a tree hybrid topology and state two advantages of using it in wide area networks.
35. Define an IPv4 address and state one key difference between an IPv4 and an IPv6 address.
36. Give any three examples for domain names?
37. Define domain name resolution and state one reason domain names are used instead of IP addresses.
38. Expand the following
a. MAC
b. HTTP
c. URI.

Questions carrying 5-Marks

1. Narrate about the evolution of computer network
2. Mention the types of networks? Explain any two of them
3. Describe a Metropolitan Area Network (MAN), list three examples, and explain two advantages of using a MAN for city-wide connectivity.
4. Describe three key characteristics of Wide Area Networks (WANs) and explain one major advantage for organizations using a WAN.
5. List various network devices and explain any one of them.
6. Describe router.
7. Identify the functions of a router as described in the passage and list three examples of tasks a router performs in a network.
8. What is Gateway? Explain.
9. Define topology? Explain any one in detail
   10. Explain what an IP address is and describe two reasons for introducing IPv6. Support your answer with examples or formats**.**
11. Explain world wide web
12. Explain DNS server.
13. Explain Local area network

14. Explain Personal area network
15. Explain metropolitan area network?
16. Explain domain name system?
17. Define the DNS server and identify four facts about DNS server.
18. Explain bus topology.