



INDIAN SCHOOL DARSAIT DEPARTMENT OF ICT



Subject: Computer Science

Topic: Communication & Networking

Worksheet No. : 14

Resource Person: Roilet Noronha

Date: _____

Name of the Student : _____

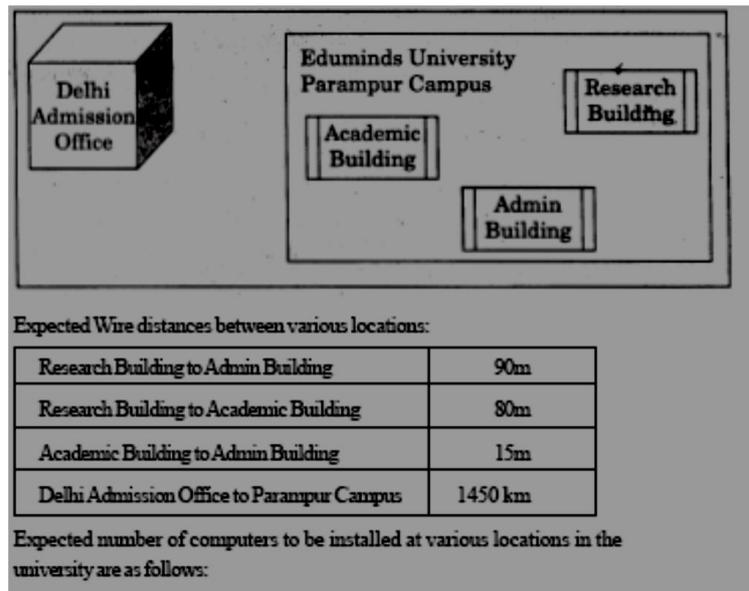
Class & Div: XII A

Roll Number : ____

1. Fill in the blanks:
 - a. Two or more computers connected to each other for information exchange form a _____.
 - b. The range of frequencies available for transmission of data is called _____.
 - c. _____ is the first Network formed.
 - d. A technique in which a dedicated and complete physical connection is established between two nodes for communication is _____ switching.
 - e. Any computer attached on the network is called a _____.
2. Multiple Choice Questions:
 - 1) Choose the option, which is not included in networking.
a. Access to remote database b. Resource sharing c. Power transferring d. Communication
 - 2) Data transfer rate is often measured in
a. Mbps b. Kbps c. Bps d. gbps
 - 3) Which one of the following is not in the category of communication channels?
a. narrow band b. broad band c. light band d. voice band
 - 4) The greater the bandwidth of a given medium, the _____ is the data transfer rate
a. higher b. lower c. both a and b d. neither a nor b
3. What is a network? Give any two uses of having a network in your school computer lab.
4. Mention any two disadvantages of a network.
5. Two students in the same class sitting inside the same room have connected their laptops using Bluetooth for working on a group presentation. What kind of network have they formed?
6. Expand the following: a. ARPANET. b. PAN c. NIU d. MAN
7. What are the requirements for setting up a network?
9. Two companies in different states wanted to transfer information. Which type of network will be used to implement the same?
10. Two schools in the same city wanted to transfer e-learning information. Name the network.
11. Two teachers in same school sitting in different labs wanted to transfer information. Name the network
12. Define a protocol. Name any two protocols used on Internet.
13. Differentiate between :
 - a. Internet and Interspace
 - b. Circuit Switching and Packet Switching technique
 - c. LAN , WAN, MAN
14. What do you mean by bandwidth and DTR?
15. What do you mean by transmission medium? Differentiate between guided and unguided transmission.
16. What are advantages of fibre optic cable?
17. Differentiate between a radio wave transmission and a microwave transmission.
18. What are the advantages and disadvantages of using satellite communication?
19. Define the term topology.
20. List any two advantages and any two disadvantages of Star topology.
21. How is Tree Topology different from Bus topology?
22. Identify the type of topology from the following.
 - a. Each node is connected with the help of single cable.
 - b. Each node is connected with the help of independent cable with central switching.
23. What do you mean by a modem? Why is it used?
24. Explain the following devices: a. Switch b. Repeater c. Router d. Gateway e. Wi-Fi Card
25. Show a network layout of star topology and bus topology to connect 4 computers.
26. Ms. Anjali Singh, in charge of Knowledge centre in ABC school, recently discovered that the communication between her centre and the primary block of the school is extremely slow and signals

- drop quite frequently. The distance between these two blocks is 140 meters.
- a. Name the type of network.
 - b. Name the device which may be used for smooth communication.
27. ABC International School is planning to connect all computers, each spread over distance of 50 meters. Suggest an economic cable type having high speed data transfer to connect these computers. Sahil wants to transfer data across two continents at very high speed. Write the name of the transmission medium that can be used to do the same. Write the type of network also.
 28. Mayank wants to transfer data within a city at very high speed. Write the name of the wired transmission medium that he should use. Write the type of network also.
 29. Mr. Akash wants to send/receive email through internet. Which protocol will be used for this purpose?
 30. Answer the following questions in the context of a computer lab with 100 computers.
 - a. Which device is used to connect all computers inside the lab?
 - b. Which device is used to connect all computers to the internet using telephone wire?
 31. Name the device that establishes an intelligent connection between a local network and external network with completely different structures.
 32. Name the network device that works like a bridge to establish connection between two networks but it can also handle networks with different protocols.
 33. Expand the following abbreviations: FTP, TCP,SMTP,VoIP
 34. What do you mean by the term Protocol Independence?
 35. Write short notes on: a) TCP/IP b) HTTP c) SMTP d) FTP e) Telnet
 36. List three important features of HTTP.
 37. Neha wants to upload and download files from/to a remote internal server. Write the name of the relevant communication protocol, which will let her do the same.
 38. Neha wants to upload hypertext document on the internet. Write the name of protocol for same.
 39. This protocol is used for communication between two personal computers using a serial interface and connected by a phone line. Write the name of the protocol.
 40. This protocol is used to transfer email over internet. What is the name of the protocol?
 41. This protocol is used to implement remote login. What is the name of the protocol?
 42. This protocol is used for chatting between two groups or between two individuals. Name the protocol.
 43. This protocol is used to transfer of voice using packet switched network. Name the protocol.
 44. Explain Remote Access Protocol.
 45. Why we need VoIP protocol?
 46. Differentiate between FTP and HTTP.
 47. Write the basic hardware requirements for VoIP.
 48. FTP is based on Client/Server principle. Explain
 49. Differentiate between SMTP and POP3.
 50. Give the full forms of the following terms: CDMA, GSM, PPP
 51. Briefly explain the generations in Mobile technologies.
 52. Differentiate between Worm and Virus
 53. Explain the following terms: Spam, Cookies, Firewall
 54. Differentiate between hacking and cracking
 55. Mona is confused between the terms Domain name and URL. Explain the difference.
 56. Identify the Domain name and URL from the following. <http://www.ABCSchool.in/home.aboutus.html>
 57. Mr. Rohan wants to prevent unauthorized access to/from his company's local area network. Write the name of the system, which he should install to do the same.
 58. Define the following with reference to threats to network security. (i) Worm (ii) Trojan Horse
 59. It means endless repetition of worthless text. In other words, it contains unwanted messages or mails. What is the name of this concept?
 60. When the user browses a website, the web server sends a text file to the web browser. Name it.
 61. It is defined as a crime in which a computer and internet is used in an illegitimate way to harm the user. What is the name of this crime?
 62. A person who gains unauthorized access to a computer with the intention of causing damage. What is the name of this crime?
 63. What is cloud computing?

64. Eduminds University of India .is starting its first campus in a small town Parampur of Central India with its center admission office in Delhi. The university has 3 major buildings comprising of Admin Building, Academic Building and Research Building in the 5 KM area Campus. As a network expert, you need to suggest the network plan as per (i) to (iv) to the authorities keeping in mind the distances and other given parameters.

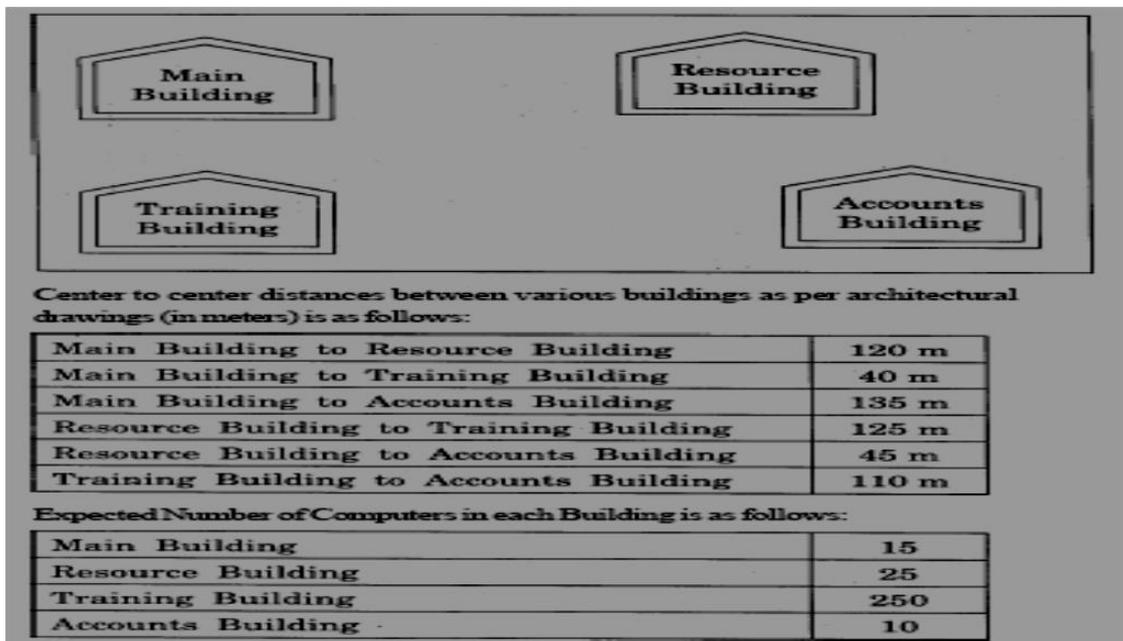


Research Building	20
Academic Building	150
Admin Building	35
Delhi Admission Office	5

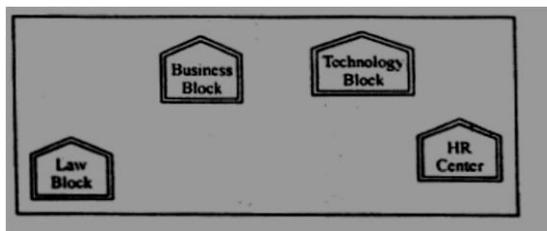
- (i) Suggest to the authorities, the cable layout amongst various buildings inside the university campus for connecting the buildings.
- (ii) Suggest the most suitable place (i.e. building) to house the server of this organisation, with a suitable reason.
- (iii) Suggest an efficient device from the following to be installed in each of the buildings to connect all the computers : (i) GATEWAY (ii) MODEM (iii) SWITCH
- (iv) Suggest the most suitable (very high speed) service to provide data connectivity between Admission Building located in Delhi and the campus located in Parampur from the following options:
 - _ Telephone line
 - _ Fixed-Line Dial-up connection
 - _ Co-axial Cable Network
 - _ GSM
 - _ Satellite Connection

65. Vidya for All” is an educational NGO. It is setting up its new campus at Jaipur for its web-based activities. The campus has four buildings as shown in the diagram below:

- (i) Suggest a cable layout of connections between the buildings.
- (ii) Suggest the most suitable place (i.e. building) to house the server for this NGO. Also, provide a suitable reason for your suggestion.
- (iii) Suggest the placement of the following devices with justification (i) Repeater (ii) Hub/Switch
- (iv) The NGO is planning to connect its International office situated in Delhi. Which out of the following wired communication links, will you suggest for a very high speed connectivity?
 - (i) Telephone Analog Line
 - (ii) Optical Fiber
 - (iii) Ethernet Cable



66. Quick learn University is setting up its Academic blocks at Prayag Nagar and planning to set up a network. The university has 3 academic blocks and one Human Resource Center as shown in the diagram below.



Center to center distance between various block/center is as follows:

Law Block to Business Block	40m
Law Block to Technology Block	80m
Law Block to HR Center	105m
Business Block to Technology Block	30m
Business Block to HR Center	35m
Technology Block to HR Center	15m

Number of Computers in each of the Blocks/Centre is follows:

Law Block	15
Technology Block	40
HR Center	115
Business Block	25

- Suggest the most suitable place (i.e. Block/Center) to install the server of this university with a suitable reason.
- Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.
- Which device you will suggest to be placed/installed in each of these blocks/center to efficiently connect all the computers with in these blocks/center.
- The university is planning to connect its admission office in the closest big city, which is more than 250 km from university, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.