

SAINIK SCHOOL GOPALGANJ
SUB: COMPUTER SCIENCE
CLASS - XII
ASSIGNMENT

Lesson 14: Computer Network

A. (Q1 to Q20) There are four options against each question. Choose the option which you consider the most appropriate as your answer.

1 Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

2 What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

3 How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

4 DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

5 IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

6 DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

7 What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

8 ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

9 What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

10 Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)
- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

11 Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

12 Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

13 _____ provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

14 Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

15 Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C

D. Class D

16 Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16
- D. Network bit – 12, Host bit – 14

17 The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

18 How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

19 How many layers are in the TCP/IP model?

- A. 4 layers
- B. 5 layers
- C. 6 layers
- D. 7 layers

20 Which of the following layer of OSI model also called end-to-end layer?

- A. Presentation layer
- B. Network layer
- C. Session layer
- D. Transport layer

B. Short Answer Questions:

- (a) Write expansion of GSM and CDMA.
- (b) Write two advantages of using an optical fibre cable over an Ethernet cable to connect two service stations, which are 190 m away from each other.
- (c) Differentiate between Hackers and crackers.
- (d) Differentiate between star topology and bus topology.
- (e) What is difference between Ring and Bus Topology? What are the advantages and disadvantages of Bus and Ring Topology?
- (f) Write the expansion of the following Networking Terms:
 - (i) SMTP
 - (ii) DHTML
 - (iii) GSM
 - (iv) XML
- (g) Explain the function of HUB and ROUTER

- (i) VB Script
- (ii) ASP
- (iii) JSP
- (iv) JavaScript

h) Two doctors in the same room have their Palm Tops using Bluetooth for working on a group presentation. Out of the following, what kind of Network they have formed?

LAN, WAN, PAN, MAN

i) Mr. Anurag Das, working as Database Administration in Vivian Enterprise. On daily routine, he manages thousand files transfer work between his own computer network and with client computer network. Before doing so, he wants a periodically security check like filtering, monitoring and logging of sessions between in and out networks. Suggest suitable system to help Mr. Anurag.

- (i) Cookies
- (ii) Firewall
- (iii) Anti-Virus

(j) Which of the following is not a Client Side script:

- (i) VB Script
- (ii) Java Script
- (iii) ASP
- (iv) PHP

(k) Expand the following terms:

- GPRS
- (ii) SMTP
- (iii) VOIP
- (iv) WLL

C. Long Answer Questions:

(a) Expertia Professional Global (EPG) is an online corporate training provider company for IT related courses. The company is setting up their new campus in Mumbai. You as a Network expert has to study the physical locations of various buildings and the number of computers to be installed. In the planning phase, provide the best possible answers for the queries (i) to (iv) raised by them.

Building to Building Distance (in Mts) :

From	To	Distance
Administrative Building	Finance Building	60
Administrative Building	Faculty Studio Building	120
Finance Building	Faculty Studio Building	70

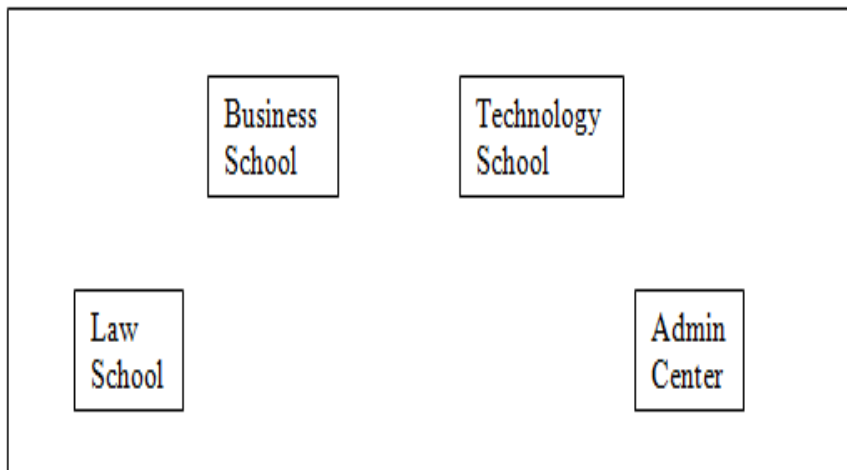
Expected Computers to be installed in each Building

Building	Computers
Administrative Building	20
Faculty Studio Building	120
Finance Building	40

- (i) Suggest the most appropriate building, where EPG should plan to install the server.

- (ii) Suggest the most appropriate building cable layout to connect all three buildings for efficient communication.
- (iii) Which type of network out of the following is formed by connecting the computers of the building?
 1. LAN
 2. MAN
 3. WAN
- (iv) Which wireless channel of the following should be opted by EPG to connect to students of all over the world?
 1. Infrared
 2. Microwave
 3. Satellite

(b) Great Sudies University is setting up its Academic school at Sunder Nagar and planning to set up a network. The university has 3 academic schools and one administration center as shown in the diagram bellow:



Law school to Business school	60m
Law school to Technology School	90m
Law school to Admin Center	115m
Business school to Technology School	40m
Business school to Admin Center	45m
Technology school to Admin Center	25m

Law school	25
Technology school	50

Admin center	125
Business school	35

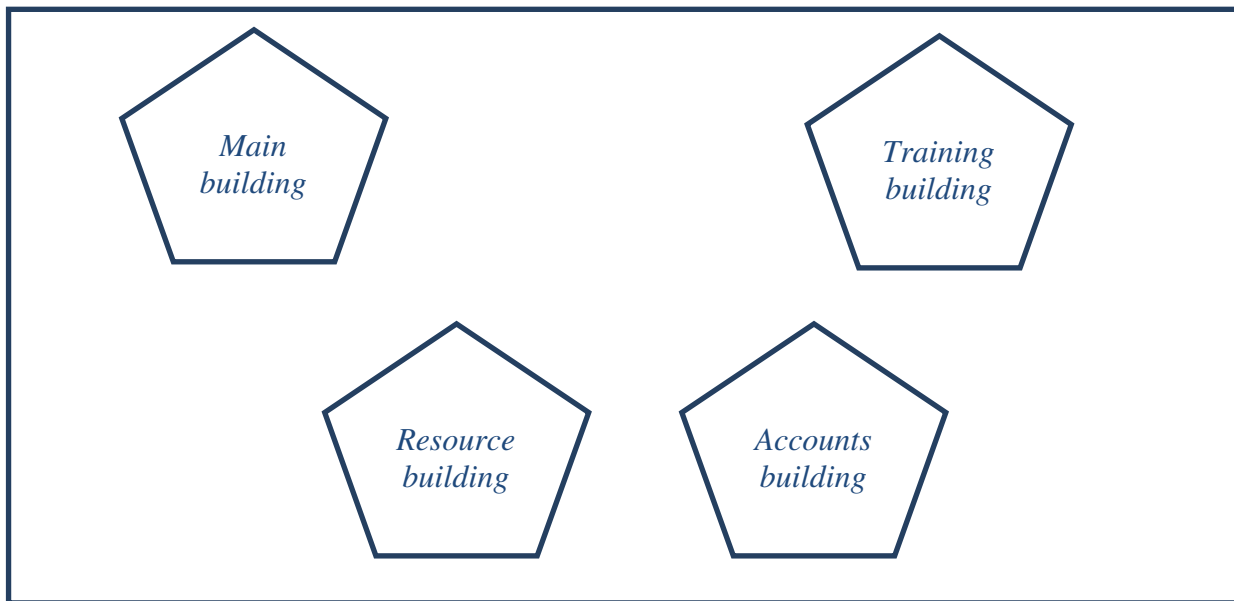
(i) Suggest the most suitable place(i.e school/center) to install the server of this university Sugewith a suitable reason.

(ii) Suggest an ideal layout for connecting these school/center for a wired connectivity.

(iii) Which device will you suggest to be placed/installed in each of these school/center to **efficiently** connect all the computers within these school/center.

(iv) The university is planning to connect its admission office in the closest big city,which is more than 350 km from the university.Which type of network out of LAN,MAN or WAN will be formed?Justify your answer.

(c) “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 diagram below:



Center to center distances between various buildings as per architectural drawings (in meters) is as follows:

Main Building to Resource Building	120m
Main Building to Training Building	40m
Main Building to Accounts Building	135m
Resource Building to Training Building	125m
Resource Building to Accounts Building	45m
Training Building to Accounts Building	110m

Expected number of Computers in each building is as follows:

Main Building	15
Resource Building	25
Training Building	250

- (i) Suggest a cable layout of connection between the buildings
- (ii) Suggest the most suitable place (i.e building) to house the server of this NGO.

Also provide a suitable reason for your suggestion.

- (iii) Suggest the placement of the following devices with justification in Main Building, Resource Building, Training Building ,Accounts Building and across the network.

i. Repeater

ii. Hub/Switch

- (iv) The NGO is planning to connect its International office situated in Delhi. Which out of following wired communication links, will you suggest for very high speed connectivity?

(i) Telephone Analog Line (ii) OpticalFibre (iii) Ethernet Cable
