

**QUESTION BANK**

**SUB: COMPUTER SCIENCE(083)**

**CHAPTER 12 Data Communication and Networking**

**1 Mark Questions**

- 1 What is bleeding of signal?
- 2 Which communication medium is to be suggested for very effective and fast communication in guided medium?
- 3 In harsh industrial environment which cable would you like to use?
- 4 Which media have the ability to communicate over oceans?
- 5 What is the difference between microwave and radiowave transmission?
- 6 Which is the special case of microwave relay system?
- 7 Which transmission medium is useful for sparsely populated areas?
- 8 In which transmission medium Bandwidth allocation is limited?
- 9 What is baud?
- 10 Differentiate between 3G and 4G.
- 11 What is XML.
- 12 In Ethernet card which connection is used for coaxial cable or twisted pair or for both?
- 13 Which device filter the data and which device can handle different protocol?
- 14 Which device do not control broadcast , filter traffic and filter collision?
15. Which networking device is used for less no. of nodes or which is for more no. of nodes?
16. Define Gateway.
17. What is a spam?
18. What is the difference between Freeware and Shareware? [1]
19. Expand the following: WLL XML [1]
20. Name any two security methods and explain any one of them.4 Marks Questions

**4 MARKS QUESTIONS**

1. Knowledge Supplement Organisation has set up its new center at Mangalore for its office and web based activities. It has 4 blocks of buildings as shown in the diagram below:

Center to center distances between various blocks

Block A to Block B 50 m

Block B to Block C 150 m

Block C to Block D 25 m

Block A to Block D 170 m

Block B to Block D 125 m

Block A to Block C 90 m

Number of Computers

Block A 25

Block B 50

Block C 125

Block D 10

e1) Suggest a cable layout of connections between the blocks. e2) Suggest the most suitable place (i.e. block) to house the server of this organisation with a suitable reason.

e3) Suggest the placement of the following devices with justification

- (i) Repeater
- (ii) Hub/Switch

e4) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible, suggest an economic way to connect it with reasonably high speed?

2. Ravya Industries has set up its new center at Kaka Nagar for its office and web based activities. The company compound has 4 buildings as shown in the diagram below:

Center to center distances between various buildings is as follows:

Harsh Building to Raj Building 50 m

Raj Building to Fazz Building 60 m

Fazz Building to Jazz Building 25 m

Jazz Building to Harsh Building 170 m

Harsh Building to Fazz Building 125 m

Raj Building to Jazz Building 90 m

Number of Computers in each of the buildings is follows:

Harsh Building 15

Raj Building 150

Fazz Building 15 Jazz Building 25 e1) Suggest a cable layout of connections between the buildings.

e2) Suggest the most suitable place (i.e. building) to house the server of this organisation with a suitable reason. e3) Suggest the placement of the following devices with justification:

(i) Internet Connecting Device/Modem

(ii) Switch e4) The organisation is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

3. "China Middleton Fashion" is planning to expand their network in India, starting with two cities in India to provide infrastructure for distribution of their product. The company has planned to set up their main office units in Chennai at three locations and have named their offices as "Production Unit", "Finance Unit" and "Media Unit". The company has its corporate unit in New Delhi.

A rough layout of the same is as follows:

Approximate distances between these Units is as follows:

From	To	Distance
Production Unit	Finance Unit	70 Mtr
Production Unit	Media Unit	15 KM
Production Unit	Corporate Unit	2112KM
Finance Unit	Media Unit	15 KM

In continuation of the above, the company experts have planned to install the following number of computers in each of their office units:

Production Unit	150
Finance Unit	35
Media Unit	10
Corporate Unit	30

i) Suggest the kind of network required (out of LAN, MAN, WAN) for connecting each of the following office units:

- Production Unit and Media Unit

- Production Unit and Finance Unit

ii) Which one of the following devices will you suggest for connecting all the computers within each of their office units?

- Switch/Hub
  - Modem • Telephone
- iii) Which of the following communication media, will you suggest to be procured by the company for connecting their local offices in Chennai for very effective (High Speed) communication?
- Ethernet cable
  - Optical fiber
  - Telephone cable

(iv) Suggest a cable/wiring layout for connecting the company's local office units located in Chennai. Also, suggest an effective method/technology for connecting the company's office unit located in Delhi.

4. Nootan Vidya Mandir in Ooty is setting up the network between its different wings. There are 4 wings named as SENIOR(S), MIDDLE(M), JUNIOR(J) and OFFICE(O).

Distance between the various wings are given below:

Wing O to Wing S 100m

Wing O to Wing M 200m

Wing O to Wing J 400m

Wing S to Wing M 300m

Wing S to Wing J 100m

Wing J to Wing M 450m

No. of Computers

Wing O 10

Wing S 200

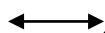
Wing M 100

Wing J 50

- Suggest a suitable Topology for networking the computer of all wings.
- Name the wing where the server to be installed. Justify your answer.
- Suggest the placement of Hub/Switch in the network.
- Mention an economic technology to provide internet accessibility to all wings.

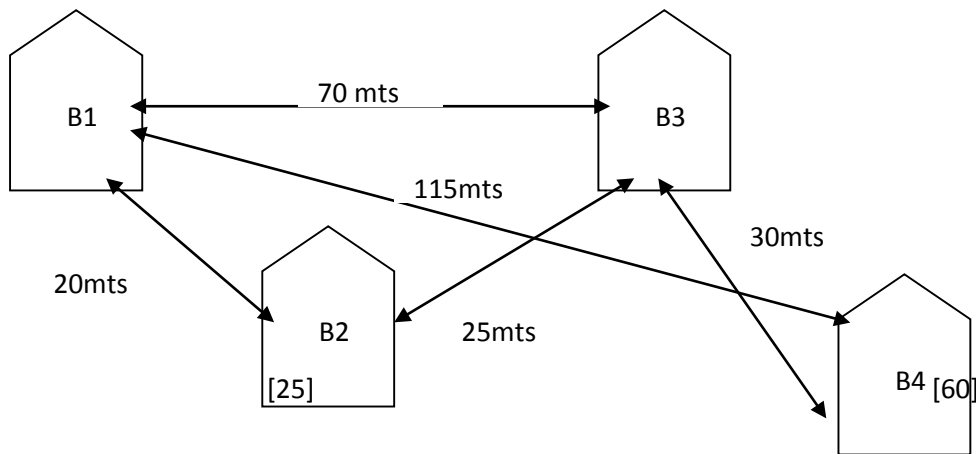
5. Global Village Enterprises has following four buildings in Hyderabad city. Computers in each building are networked but buildings are not networked so far. The company has now decided to connect building also.

- Suggest a cable layout for these buildings.
  - In each of the buildings, the management wants that each LAN segment gets a dedicated bandwidth i.e bandwidth must not be shared. How can this be achieved?
  - The company also wants to make available shared Internet access for each of the buildings. How can this be achieved?
  - The company wants to link its head office in GV1 building to its another office in Japan.
    - Which type of transmission medium is appropriate for such a link?
    - What type of network would this connection result into?
- (f) M S University has following four buildings in Vadodara city to run different courses



Shows distance

[ ] Shows number of computers in each building



Computers in each building are networked but buildings are not networked so far. The University has now decided to connect buildings also.

- (a) Suggest a cable layout for these buildings.
- (b) In each of the buildings, the management wants that each LAN segment gets a dedicated bandwidth i.e. bandwidth must not be shared. Which device should be installed to connect computers in each building to achieve this?
- (c) The management also wants to make available shared Internet access for each of the buildings. Which device should be installed in each building to accomplish this?
- (d) The University wants to link its head office in B1 to Cambridge University in London.
  - i) Which type of transmission medium is appropriate for such a link?
  - ii) Which type of network would this connection result into?