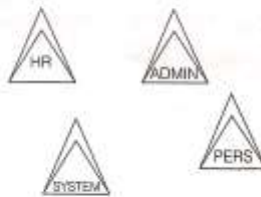


Section-D

31. Red Pandas Infosystems has its 4 blocks of buildings. The number of computers and distances between them is given below :



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Building	Number of Computers
HR	15
ADMIN	100
SYSTEM	25
PERS	30

Building	Distance
HR - Admin	10m
HR- System	50m
HR- Pers	750m
Admin- System	300m
Admin- Pers	20m
System-Pers	250m

Answer the following questions with respect to the above :

- (i) Suggest a suitable cable layout for the network.
- (ii) Suggest the best place to house the server of the network.
- (iii) Which topology should be used to connect computers in each building?
- (iv) What kind of network will be formed here? (LAN/MAN/WAN)
- (v) Write one advantage of the topology suggested by you.

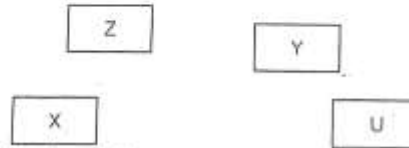
Ans. (i) The cable layout is given below :



- (ii) ADMIN building , as it has the maximum number of computers.
- (iii) Star topology, as it is the topology offering best facilities.
- (iv) LAN – Local Area Network
- (v) Fault detection is easy.

Section-D

31. Sony corporation has set up its 4 offices in the city of Srinagar, with its offices X, Z, Y, U:



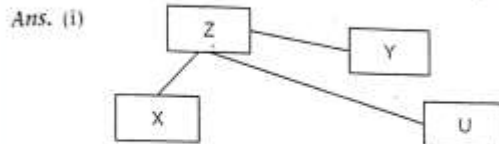
Branch to Branch distance is given below:

X to Z	40 m
Z to Y	60 m
Y to X	135 m
X to U	70 m
Z to U	165 m
Z to U	80 m

Number of computers in each of the offices is as follows:

X	50
Z	130
Y	40
U	15

- (i) Suggest a suitable cable layout of connectivity of the offices. [1]
- (ii) Suggest placement of server in the network with suitable reason. [1]
- (iii) Suggest placement of following devices in the network: [1]
 - (a) Switch/Hub
 - (b) Repeater
- (iv) Suggest a suitable topology for connecting the computers in each building. [1]
- (v) Write any one advantage of the topology suggested. [1]

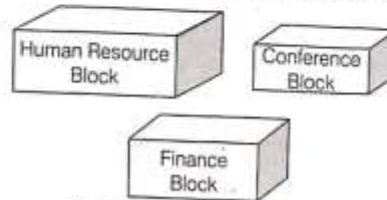


- (ii) Building Z, as it has the largest number of computers.
- (iii) (a) Switch/Hub to be placed in all the offices.
- (b) Repeater to be placed between Z-U.
- (iv) Star topology.
- (v) Fault detection and isolation is easy.

Section-D

31. Trine Tech Corporation (TTC) is a professional consultancy company. The company is planning to set up their new offices in India with its hub at Hyderabad. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (i) to (v) below.

Physical locations of the blocks of TTC



Block to block distance (in m)

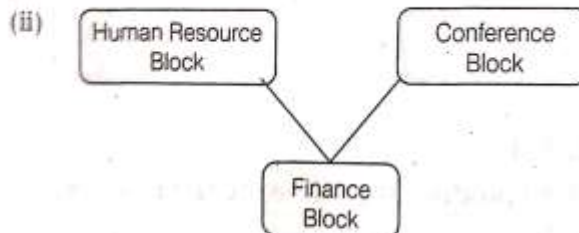
Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be in each block

Block	Computers
Human Resource	25
Finance	120
Conference	90

- (i) Which will be the most appropriate block, where TTC should plan to install their server? [1]
- (ii) Draw a block to block cable layout to connect all the buildings in the most appropriate manner for efficient communication. [1]
- (iii) Suggest a suitable topology to connect the computers in each building. [1]
- (iv) Which of the following device will be suggested by you to connect each computer in each of the buildings? [1]
- (a) Switch/Hub (b) Modem (c) Gateway
- (v) Company is planning to connect its offices in Hyderabad which is less than 1 km. Which type of network will be formed? [1]

Ans. (i) TTC should install its server in finance block as it is having maximum number of computers.



The above layout is based on minimum cable length required, which is 120 m in the above case.

- (iii) Star topology, as it has independent connections that help easy network setup and fault detection.
- (iv) (a) **Switch/Hub** These are devices that can connect multiple nodes in a network, together.
- (v) Since, the distance is less than 1km.
LAN (Local Area Network) will be formed.