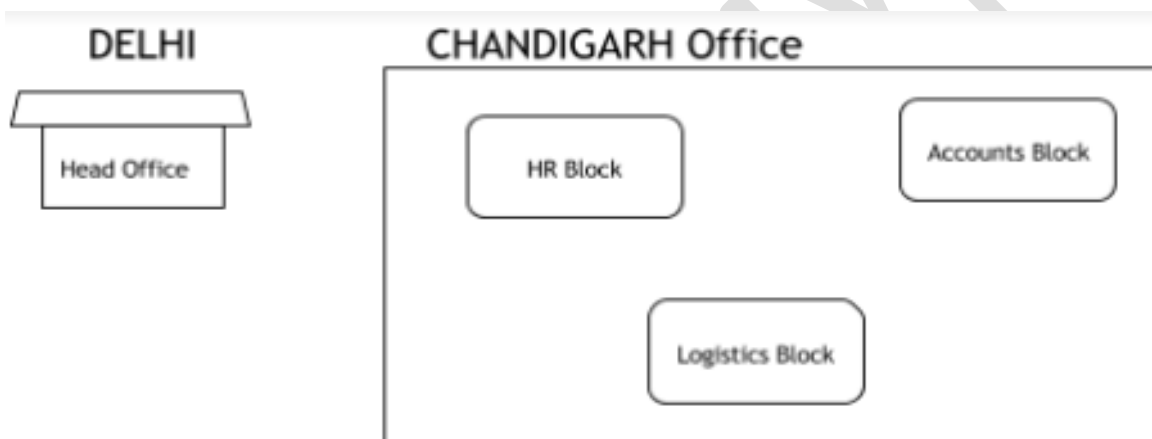# COMPUTER NETWORK AND NETWORK TYPES

Q.1 Hi Speed Technologies Ltd is a Delhi based organization which is expanding its office setup to Chandigarh. At Chandigarh office campus, they are planning to have 3 different blocks for HR, Accounts and Logistics related work. Each block has number of computers, which are required to be connected in a network for communication, data and resource sharing. As a network consultant, you have to suggest the best network related solutions for them for issues/problems raised in (i) to (iv), keeping in mind the distances between various blocks/locations and other given parameters.

DELHI   CHANDIGARH Office

Head Office

HR Block   Accounts Block

Logistics Block

Shortest distances between various blocks/locations:

HR Block to Accounts Block	400 Metres
Accounts Block to Logistics Block	200 Metres
Logistics Block to HR Block	150Metres
DELHI Head Office to CHANDIGARH Office	270 Km

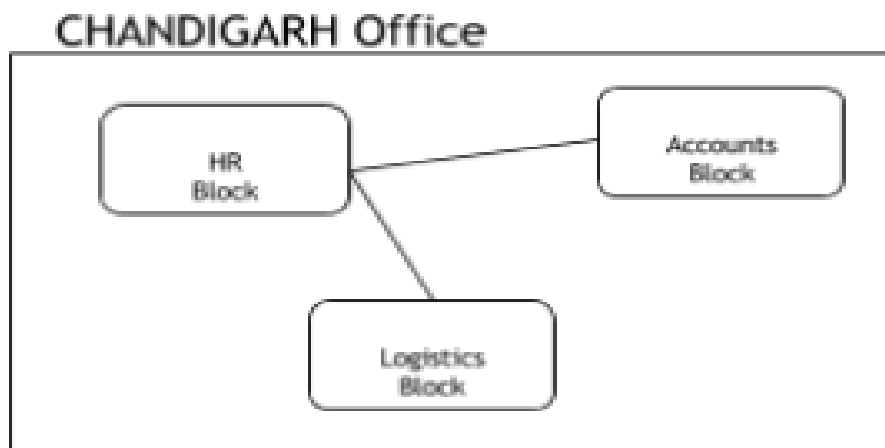Number of Computers installed at various blocks are as follows:

HR Block	70
Account Block	50
Logistics Block	40

(i) Suggest the most appropriate block/location to house the SERVER in the CHANDIGARH Office (out of the 3 Blocks) to get the best and effective connectivity. Justify your answer.

Ans HR Block - Because it has maximum number of computers.

(ii) Suggest the best wired medium and draw the cable layout (Block to Block) to efficiently connect various Blocks within the CHANDIGARH office compound.
Ans Best wired medium: Optical Fibre OR CAT5 OR CAT6 OR CAT7 OR CAT8 OR Ethernet Cable

CHANDIGARH Office

(iii) Suggest a device/software and its placement that would provide data security for
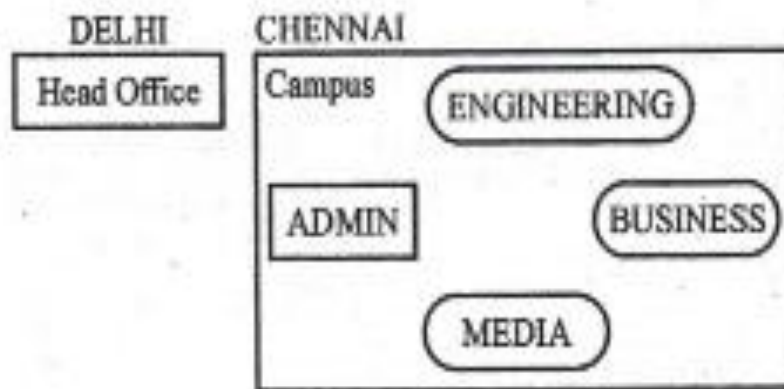the entire network of CHANDIGARH office.
Ans Firewall - Placed with the server at the HR Block
 (iv) Which of the following kind of network, would it be
(a) PAN
(b) WAN
(c) MAN
(d) LAN
Ans (b) WAN and (d) LAN   OR (b) WAN OR (d) LAN

b. Perfect Edu Services Ltd. is an educational organization.It is planning to setup its India campus at Chennai with its head office at Delhi. The Chennai campus has 4 main buildings - ADMIN, ENGINEERING, BUSINESS and MEDIA. You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (iv), keeping in mind the distances between the buildings and other given parameters.

Shortest Distances between various building:

ADMIN to ENGINEERING	55m
ADMIN to BUSINESS	90m
ADMIN to MEDIA	50m
ENGINEERING to BUSINESS	55m
ENGINEERING to MEDIA	50m
BUSINESS to MEDIA	45m
DELHI Head Office to CHENNAI Campus	2175 km

Number of Computers installed at various building are as follows:

ADMIN	110
ENGINEERING	75
BUSINESS	40
MEDIA	12
DELHI Head Office	20

(i) Suggest the most appropriate location of the server inside the CHENNAI campus (out of the 4 buildings), to get the best connectivity for maximum no. of computers. Justify your answer.

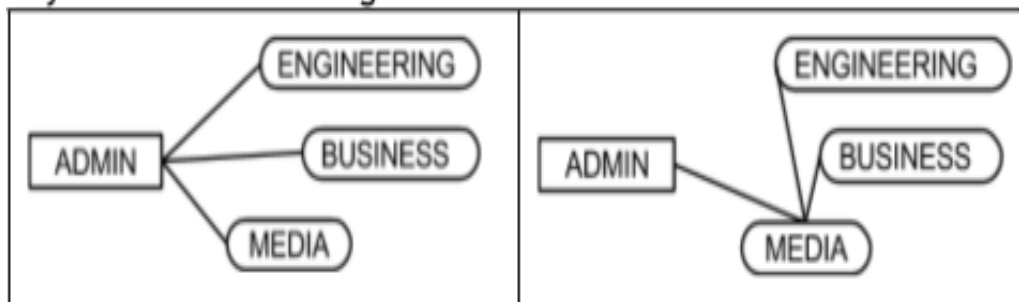Ans. ADMIN (due to maximum number of computers)

OR

MEDIA (due to shorter distance from the other buildings)

(ii) Suggest and draw the cable layout to efficiently connect various buildings within the CHENNAI campus for connecting the computers.

Ans.

Any one of the following

(iii) Which hardware device will you suggest to be procured by the company to be installed to protect and control the intemet uses within the campus?

Ans. Firewall OR Router

(iv) Which of the following will you suggest to establish the online face-to-face communication between the people in the Admin Office of CHENNAI campus and DELHI Head Office?

(a) Cable TV

(b) Email

(c) Video Conferencing

(d) Text Chat

Ans. Video Conferencing