

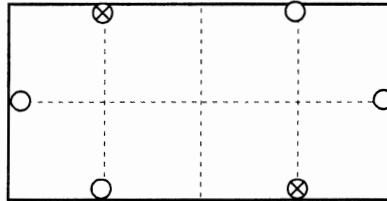
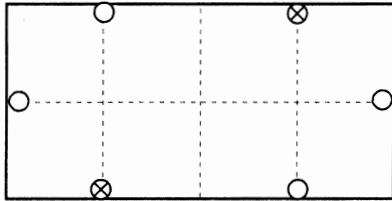
Paper 2B

	Marks
1. (a) (i) TCP port number	1
(ii) Network mask: 255.255.255.0 Default gateway: 192.168.10.3	1 1
(b) (i) Connect another network.	1
(ii) It provides a <u>secure channel</u> for Vicky to connect to the network.	1
(iii) It automates the assignment of IP addresses.	1
(c) (i) Use WPA2 encryption method. Use a longer encryption key. Hide SSID.	1×2
(ii) The MAC address is different. She should add the MAC address of the network card in the new tablet in the Access Control List.	1 1
(d) Router can select a channel with less collision.	2
(e) Stability – It will not be influenced by the environment such as obstacles to the connection. Security – Data packets will not easily be collected.	2 2
2. (a) (i) Visual image	1
(ii) bit stream of visual image	1
(iii) IP camera	1
(iv) Monitor	1
(b) (i) The IP cameras capture the images and send them in one way only.	1
(ii) Advantage: The time for transmission is shorter. Disadvantage: There are more overheads for the transmission.	1 1
(c) (i) Replace the other CAT5 cables with optical fibres. Upgrade the switch with a higher throughput capacity.	1, 1
(ii) While the IP cameras are capturing images, viewers can control the movement of the cameras. The data are sent in both ways.	2
(d) (i) TCP. The completeness of the video data is the key and all data should be received.	1+1
(ii) UDP. Timely transmission is the key and some data loss is acceptable.	1+1

Marks

3. (a) (i) Simulate the network access by 100 mobile devices to test whether the information of the current exhibition can be accessed and measure the corresponding response times. 1
1
- (ii) User manual should be given and visitors need to set up their devices to connect to the Intranet. The museum should have sufficient support service for 100 visitors during the peak hours. 1
1
- (b) (i) They cannot find the network in some areas. (insufficient network coverage) 1×3
 They cannot access the Intranet as the other APs are fully connected. (maximum number of connections)
 The throughput of the connections is low. (low throughput)

(ii)



1
1

It can have a better coverage.

- (c) network management 1×2
 Health problems
 installation cost
- (d) (i) It is an outdoor area between the halls and the server. / It is difficult to install cables. 1
- (ii) It manages the connections between the APs in the hall and Y. 1, 1
① ①

		Marks
4.	<p>(a) The access control can be well managed. (network management) / The effective network bandwidth is higher. / The level of security is higher. / Some areas (e.g. basement and rooms with medical equipment) that the mobile network is not applicable can be covered by the WiFi network.</p> <p>(b) Manage the distribution of the medical data in an efficient way. (distribution) Manage the access rights of the data. (security)</p> <p>(c) (i) If circuit switching were used, the communication channel by a user will be occupied till the end of the transmission. Even though no actual communication is taking place, the channel remains reserved and protected from other users. Hence only one doctor's messaging device can receive patient's medical data at a time.</p> <p style="padding-left: 20px;">(mechanism ① + application ①)</p> <p>(ii) Data is divided into packets with headers and trailers which contain the package information. Packets from different messaging devices can be sent through the network at the same time but in different order. The receiving ends can reorder the packets received according to the information stored in the header and trailer.</p> <p style="padding-left: 20px;">Different routes ① Divide and reassemble ①</p> <p>(d) (i) The storage size needed can be expanded or trimmed down easily. (flexibility) The maintenance of the file servers is provided by the third parties.</p> <p>(ii) If there is no Internet access, the Cloud storage cannot be accessed. / The throughput is questionable. / There might be some data security issue during the data transmission through the Internet. / There might be some privacy issue when the data is stored in the host and managed by their staff.</p> <p>(e) (i) Bluetooth/ultra-wideband (UWB)</p> <p>(ii) The communication range is smaller. / There are ad hoc network connections. / It involves an individual person only. / Usually there is one single server only.</p>	<p>1×2</p> <p>1 1</p> <p>2</p> <p>2</p> <p>1×2</p> <p>1×2</p> <p>1</p> <p>1×2</p>