

Paper 2B

		Marks	
1.	(a)	LAN WAN LAN	1 1 1
	(b)	(i) No, it is because there is no wireless network. / Yes, it provides wireless connections for other mobile devices. (ii) The VPN applies IPsec to authenticate and encrypt data packets.	1 2*
	(c)	(i) Printing jobs can be carried out directly and hence the printing time required is shorter. (ii) The printing queue can be effectively managed by the desktop computer. (Better control)	1 1
	(d)	(i) a segment of the printing data / a header / a CRC data (ii) Store the data packets in a buffer and print them according to the order of the packets. ⓐ Buffering	1×2 2*
	(e)	(i) It should be duplex mode. During the printing, the printer may send a status message back. (ii) Minimise the effort (the amount of coordination required) to avoid retransmission (collisions). / Minimise the chance of collisions when other devices need to retransmit data packets.	2* 2*
2.	(a)	(i) A high performance computer acts a server to centralise the control. The server provides most of its resources to the clients. Usually a client does not share any of its resources. (ii) memory size in the server / processing power of the server / number of users / types of application	1×2 1×2
	(b)	(i) A = \$17,500 B = \$16,000 (ii) A = $20 \times 50 + 15 \times 200 + 10 \times 600 = 10,000$ kbps B = $20 \times 50 + 20 \times 200 + 5 \times 600 = 8000$ kbps It can support both scenarios.	1 1 1 1
	(c)	(i) Antivirus software, firewall, public and private key encryption (certificates) + description (ii) The system will receive numerous external communications requests (from botnets) such that it cannot respond to normal requests. In the end, the server will become overloaded.	1 1 2*
	(d)	(i) server (ii) Synchronise the data (Create backup). Send a warning signal to the network administrator. Shut down some services in the server.	1 1×2

		Marks
3.	(a) (i) Higher stability Higher security Dedicated locations/computers to access the Internet (less disturbance to the library visitors)	1×2
	(ii) mobility (visitors) / sharing of bandwidth (more users) / flexibility (installation) / better control of the connections to different kinds of devices	1×2
	(b) It can minimise the impact of hacker attack on the network as the electronic materials are isolated by the proxy server. / Since the electronic materials are static in nature, the proxy server can store them in cache so as to speed up the data access for other visitors.	2
	(c) (i) Install the firewall between the router and the switch in the staff zone / visitor zone.	1
	(ii) A firewall filters suspected data packets so as to avoid denial of service attack. A firewall maintains an access control list to control inbound and outbound communication so as to avoid unauthorised access. A firewall sends alert signals/messages to network administrators when there is abnormal network traffic.	1×2
	(d) (i) The network still works properly because the zones are still in different subnets.	1
	(ii) 192.168.2.254	1
	(e) (i) Visitors cannot identify the network of the library without confusion. / Some other networks might use the same SSID.	1
	(ii) Visitors' mobile devices can detect and connect to the access point with the strongest available signal under the same SSID.	1 1
	(iii) Examples: (Restrictions on use / restriction of liability / personal data) Producing excessive network traffic such as sending massive emails is prohibited. The library will not be liable for any damages or injury caused by the use of the network. Personal data sent through the network may be stored by the ISP.	1×2

		Marks
4. (a)	Switches: Separately control the network traffic. Router: Manage the Internet connection for workstations.	1 1
(b)	Advantage: It is easier to access the files outside the office. Disadvantage: The security control is lower.	1 1
(c) (i)	Do IP addresses are set properly? Can all network devices be found in the network? (ping)	1 1
(ii)	Network diagram IP configuration	1×2
(d) (i)	Folder owners and guests have the <i>read</i> permission.	1
(ii)	Folder owners have the <i>read</i> and <i>write</i> permissions and guests have the <i>read</i> permission.	1
(iii)	No, folder owners and guests have the <i>read</i> permission only.	1
(iv)	CR o=r, g=r \usr CR o=rw, g=r \usr\policy CR o=rw, g=r \usr\reports	2

* Marking criteria

- ② Illustrate a logical and concrete answer
- ① Illustrate a relevant answer