

KASNEB

CICT PART II SECTION 4

DATA COMMUNICATION AND COMPUTER NETWORKS - PRACTICAL

FRIDAY: 26 May 2017.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

You are provided with the following items:

1. One flash disk.
2. Printing materials.
3. Two standalone personal computers; Alpha and Beta each running on Microsoft Windows XP or above. Each computer has an inbuilt modem and network adapter card.
4. Three CAT 5/6 Ethernet straight through cables terminated with RJ-45.
5. One Ethernet switch.
6. A printer.

Additional instructions:

- (a) Save all your work (including typed answers to the theory questions where applicable) in the flash disk provided and in a folder bearing your registration number.
- (b) Work on each question should be saved in the subfolder contained in the folder created in instruction (a) above. The name of the subfolder should correspond to the question number.
- (c) Your registration number MUST appear as a header on every printout containing your work.
- (d) You must also indicate the number of the question answered on the header created in instruction (c) above.

Note: The information in instructions (a) to (d) above must be computer generated.

At the end of the examination duration, you should hand in to the invigilator(s):

- (i) The flash disk containing your work.
- (ii) ALL printed work.
- (iii) All unused printing paper(s).

QUESTION ONE

Create a word processor document named "Question 1". Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) Use the equipment provided to set up a network.

Configure your computers with the following details:

	Alpha	Beta
IP address	192.168.60.41	192.168.60.42
Subnet mask	255.255.255.0	255.255.255.0
Default Gateway	192.168.60.41	192.168.60.41

Capture and save screenshot displaying the above details for each computer. (4 marks)

- (b) While in computer "Alpha" use an appropriate command to:

- (i) View details of all data packets that have been sent over the network interface.

Capture and save a screenshot displaying the details. (2 marks)

- (ii) Provide information about NetBIOS names resolution and registration statistics.

Capture and save this report. (2 marks)

- (c) Use an appropriate diagnostic tool to display the report showing why your network is not able to access internet connection.
Capture and save the report. (2 marks)
- (d) Capture and save the screenshot displaying the inbound rules and monitoring for:
- (i) Active network. (2 marks)
 - (ii) Firewall state. (2 marks)
 - (iii) General and login settings for computer Beta. (2 marks)
- (e) Evaluate the objectives of network security services. (4 marks)

Print the word processor document.

(Total: 20 marks)

QUESTION TWO

Create a word processor document named "Question 2". Use the word processor document to save the answers and screenshots captured in the following questions:

- (a) Describe three components of a fiber optic cable. (6 marks)
- (b) On Alpha, capture and save the screenshot displaying the configurations to automatically start the remote desktop help session manager during the computer start up. (3 marks)
- (c) Capture and save screenshots displaying the results of the following tasks:
- (i) The audit for login events in one of your computers. (2 marks)
 - (ii) The account lockout threshold to three invalid attempts. (2 marks)
 - (iii) Display of the application security log. (2 marks)
- (d) (i) Using Beta, create a new user group called "Technicians" whose description is "hardware repairs and maintenance". Capture a screenshot showing how this task is done. (2 marks)
- (ii) Allow technicians to back up and restore files and directories.
Capture and save screenshot showing how these tasks are performed. (2 marks)
- Insert the flash disk provided in Beta. Capture and save a screenshot showing how this storage medium is used by Windows backup. (1 mark)

Print the word processor document Question 2.

(Total: 20 marks)

QUESTION THREE

Create a word processor document named "Question 3". Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) (i) Allow the Technicians group created in Question 2 above, the permission to print and manage the printer that is connected to Alpha.
Capture and save screenshots displaying how the above task is accomplished. (4 marks)
- (ii) Capture and save a screenshot displaying the default printer, change the printer share name to "Datacom". (2 marks)

(b) Use the appropriate tool to change your network connection settings to allow the following services to run:

- FTP Server.
- IP security.
- Simple network management protocol (SNMP)
- Print management service - scan document secure web server (HTTPS).
- Telnet server.

Capture and save screenshots displaying how the above activities are performed. (6 marks)

(c) When connecting to a network, it is important for the user to know the location of the network she is connecting to for security purposes. If the network is unidentified, the computer may ask for the network location.

Required:

(i) Set your network to set all unidentified network locations as "public".

Capture and save screenshots displaying the above settings. (2 marks)

(ii) Configure your network settings to allow users to change network name, location and network icon for all networks.

Capture and save screenshot displaying the above settings. (2 marks)

(d) Summarise four steps of restarting an external modem. (4 marks)

Print "Question 3" document.

(Total: 20 marks)

QUESTION FOUR

Create a word processor document named "Question 4". Use the word processor document to save the solutions and screenshots captured in the following questions:

(a) A system connecting to a wireless network can be configured by the user or WLAN will automatically take over.

Required:

Capture and save a screenshot displaying the system components that the WLAN depends on. (3 marks)

(b) Windows inbuilt tools can be used in monitoring network resources and activities.

Required:

(i) Capture and save a screenshot displaying the overall reliability details of your network. (3 marks)

(ii) Create a new user named "data collectors set" in Alpha computer. Add performance counter to the system log for the TCPv4 in one of your computers.

Capture and save a screenshot displaying the procedure you have taken. (6 marks)

(c) From a broad perspective, the convergence of several technologies and market trends is making it possible to interconnect more and more smaller devices cheaply and easily.

Required:

Summarise four trends favouring the above statement. (4 marks)

(d) Explain four benefits of network monitoring tools. (4 marks)

Print "Question 4" document.

(Total: 20 marks)

QUESTION FIVE

Create a word processor document named "Question 5". Use the word processor document to save the answers and screenshots captured in the following questions:

- (a) Fourth generation (4G) wireless system is a wireless mobile telecommunications technology that is succeeding 3G.
Outline four features of 4G that are making it more popular than 3G. (4 marks)
- (b) Capture a screenshot showing the general properties of outbound rule network discovery (UPnP-Out) for private profile. (4 marks)
- (c) Use the appropriate tool to capture and save a screenshot showing each of the following:
- (i) Latest system diagnostic report. (2 marks)
 - (ii) Eventlog application properties. (2 marks)
- (d) Allow Beta to be controlled remotely but restrict the invitations to be 45 days.
Capture a screenshot showing these details. (2 marks)
- (e) (i) Open the technicians file created in Question 2 above from Alpha. (3 marks)
- (ii) Share the technicians file. (3 marks)
- Capture and save screenshots displaying the above tasks.

Print the word processor document.

(Total: 20 marks)

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