



CICT PART I SECTION 2

OPERATING SYSTEMS - PRACTICAL

TUESDAY: 22 May 2018.

Time Allowed: 3 hours.

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

Ensure that you are provided with a computer, a flash disk and printing materials.

Additional instructions:

1. Save all your work (including theory answers where necessary) in the flash disk provided and in a folder bearing your registration number.
2. Work on each question should be saved in the subfolder contained in the folder created in number 1 above. The name of the subfolder should correspond to the question number.
3. Your registration number MUST appear as a header on every printout containing your answers.
4. You must indicate the number of the question answered on the header created in number 3 above.

Note: The information in numbers 1-4 above must be computer generated.

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

- (a) The flash disk containing your work.
- (b) All printed work.
- (c) All unused printing paper(s).

QUESTION ONE

Create a word processor document named "Question One".

Use the word processor document to save answers to questions (a) to (f) below:

- (a)
 - (i) Explain the term "virtual machine" as used in computing. (1 mark)
 - (ii) State one benefit of using a virtual machine. (1 mark)
- (b) You wish to replace the hard disk of your personal computer.
Enumerate four steps that you would follow to accomplish the above task. (4 marks)
- (c) Capture and save a screenshot showing whether the computer you are using is part of a domain or not. (3 marks)
- (d) Adjust the maximum disk space used for system protection to be 2% of your computer hard disk space.
Capture and save a screenshot showing the results of the above task. (4 marks)
- (e) Use an appropriate tool to capture and save a screenshot of your computer's performance rating. (3 marks)
- (f) Clear all Windows experience index scores and re-rate the system.
Capture and save in each case a screenshot showing:
 - (i) The re-rate progress. (2 marks)
 - (ii) The final rating. (2 marks)

Print "Question One" document.

(Total: 20 marks)

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QUESTION TWO

Create a word processor document named "Question Two" and use it to save your answers to questions (a) to (d) below.

- (a) Explain the following terminologies as used in operating systems:
- (i) Context switching. (2 marks)
 - (ii) System call. (2 marks)
 - (iii) Process control block (PCB). (2 marks)
- (b) Capture and save screenshot(s) in each case to illustrate how you would perform the following tasks:
- (i) Show the CPU usage history. (2 marks)
 - (ii) Change a process priority to high. (2 marks)
 - (iii) Display, using a diagnostic tool your computer's system information. (2 marks)
- (c) Capture and save a screenshot showing how you would allow programs to communicate through the Windows firewall. (2 marks)
- (d) Capture and save screenshots showing how you would perform each of the following:
- (i) To automatically hide taskbar when it is not active. (2 marks)
 - (ii) To lock the taskbar. (2 marks)
 - (iii) Turn on the icon and notification of the network status. (2 marks)

Print "Question Two" document.

(Total: 20 marks)

QUESTION THREE

Create a word processor document named "Question Three" and use it to save your answers to questions (a) to (f) below.

- (a) (i) In relation to Windows operating systems, explain the meaning of the term "bit locker drive encryption". (2 marks)
- (ii) Summarise the two prerequisites for efficient operation of the bit locker. (2 marks)
- (b) Mr Ndii Kei wishes to do a new installation of Microsoft Windows 8.1 operating system onto a notebook computer which is currently running on Microsoft Windows 7 operating system.
- Advise Mr Ndii Kei on the procedure to use in order to load the operating system from an image stored on a USB flash disk. (2 marks)
- (c) Your computer acts as a print server.
- Configure your computer such that when powered off but connected to a power source, it allows:
- (i) The device to wake the computer. (2 marks)
 - (ii) A magic packet to wake the computer. (2 marks)
- Capture and save screenshots to show how you accomplished the above tasks.
- (d) Using an appropriate utility, capture and save screenshots showing how you would limit the processes that your computer initiates during startup in order to speed up the booting up process. (4 marks)
- (e) Capture and save screenshots showing how you would delete temporary files from your hard drive. (3 marks)
- (f) Using an appropriate utility, capture and save screenshots showing how you would delete a file from the recent documents in Microsoft Word application. (3 marks)

Print "Question Three" document.

(Total: 20 marks)

QUESTION FOUR

Create a word processor document named "Question Four" and use it to save your solutions to questions (a) to (e) below:

- (a) Assess two reasons for providing an environment which allows process co-operation. (4 marks)
- (b) State two circumstances under which CPU scheduling decisions might be made. (2 marks)
- (c) Use an appropriate tool to capture and save a screenshot showing the information on environment variables of your computer system under software environment. (4 marks)

- (d) Create a folder called OSPJ2018. Allow the folder to be shared and change the following details:

Share name: Perwork
Description: My personal practical work
User limit: 5

Capture and save screenshots showing the steps followed to accomplish the above tasks. (6 marks)

- (e) While your flash disk is inserted in your computer, perform the following tasks:

- (i) Display the volume(s) contained in your flash disk. (2 marks)
- (ii) Change your flash disk removal policy to better performance. (2 marks)

Capture and save a screenshot showing the results of each of the above tasks.

Print "Question Four" document.

(Total: 20 marks)

QUESTION FIVE

Create a word processor document named "Question Five".

Use the word processor document to save your answers to questions (a) to (e) below:

- (a) (i) Define the term "partitioning" in the context of an operating system. (2 marks)
- (ii) Differentiate between exFAT32 and NTFS file systems. (4 marks)

- (b) (i) Using an appropriate utility, display the Windows registry editor.
Capture and save a framed screenshot of the Windows registry editor. (2 marks)

- (ii) Configure your local machine setting in the Windows registry to only match whole string during a search operation.

Capture and save a screenshot showing how you completed the above task. (3 marks)

- (c) Rename your computer to "Accounts" and set it to be a member of the "Finance" workgroup.
Capture and save the screenshot for Finance workgroup. (2 marks)

- (d) Turn on the following Windows features:

(i) All games. (1 mark)

(ii) Telnet client. (1 mark)

(iii) FTP service. (2 marks)

- (e) Set your computer to load startup items and system services during selective startup.

Capture and save the screenshots of how you completed the above task. (3 marks)

Print "Question Five" document.

(Total: 20 marks)