

# Grade 10 CAT

The work below is divided into work to be completed for each week of the holidays.

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Work to be completed in 27 March to 3 April:

Module 1.6 – Extended Software Concepts (p.56 – 63)

- Stand-alone vs. integrated software (p.56)
- Licensing and licensing agreements including end-user, site license agreements, creative commons (p.57)
- Freeware, shareware, proprietary software (p.58)
- Open-source software – definition and benefits, disadvantages (p. 58 – 59)
- System software (p.59)
  - Drivers: What is a driver? (p.61)
  - Utility programs: What is it?/Purpose (p.59)
- Examples of generic/common utility programs such as backup (p.59 – 61)

Activity

1. Define the following types of software:
  - a. Freeware
  - b. Shareware
  - c. Open source
  - d. Proprietary software
2. Describe how one would go about using proprietary software, without having to spend much money. Motivate your answer.
3. One of Mr. Itek's children knows his friend has software for Microsoft Word. He wants to copy the software, then install it on their home computer.
4. Is Mr. Itek doing the right thing? Motivate your answer.
5. How would you categorise the way in which Mr. Itek's friend intends on using the software?

## Consolidation Activity

1. The table below is comparing freeware, shareware and proprietary software. Make a copy of the table in your workbook and fill in the headings, as well as the missing information. (12)

TYPE OF SOFTWARE			
Description	Known as “try before you buy” software		
Example		Gmail	
Advantage			Technical support is freely available
Disadvantage			

2. Fairiza purchases a laptop that she can use to work on assignments for her course at university. The laptop was supplied with the Windows 10 Home operating system.
- a. She obtained a copy of Microsoft Office 2016 from a friend and installed it on her laptop. Explain why she should NOT do this. (2)
  - b. If she wishes to continue using Office 2016, what type of license does she need? (1)
  - c. When she updates Office 2016 with a valid license, she is asked to acknowledge that she has read the EULA. What does EULA stand for? (1)
3. If she cannot afford to purchase a license from Microsoft, she could install an Open Source office suite.
- a. What is open-source software? (2)
  - b. Give an example of an Open Source office suite that she could use. (1)
4. You have purchased a new printer. When you connect the printer to your computer for the first time, you have to install a printer driver that is on a CD provided with the printer.
- a. What is a driver? (1)
  - b. Write down the missing words:  
  
When you plugged in a new wireless mouse for the first time, the driver was installed automatically by the operating system. This is known as plug and play, or \_\_\_\_\_.
  - c. What is a hot-swappable device? (2)
5. Mention two utility programs that are part of the Windows 10 operating system. (2)

## Written Module Activity p.62 – 63

Work to be completed in 6 to 10 April:

Module 1.7 – Extended Hardware Concepts (p.64 – 79)

*Input (Basic concepts, features and uses)*

- Pointing devices
  - o Touchpad, trackball, pointing stick, touch screen, pen input, joystick
- Digital camera
- Scanning and reading devices
  - o Flatbed, handheld, sheet-feed scanners
  - o Radio-frequency identification (RFID), magnetic stripe, magnetic ink character recognition (MICR), optical mark recognition (OMR), bar-coding
  - o Optical character recognition (OCR)
- Video input – video camera, webcam
- Audio input: Microphone, voice recognition
- Biometric input e.g. fingerprint scanners

Activity

1. Touch screens enable users to use their fingers to press keys directly on the screen.
  - a. Give two examples of devices that use touch-screen technology.
  - b. What device can be used on a touch screen to draw or write on it?  
Also, give a brief description of this device.
2. Briefly explain the function of scanning devices.
3. Barcode readers are used in a variety of environments.
  - a. List any two instances where a barcode reader can be used.
  - b. Explain briefly how a barcode reader works.

4. Video inputs measure a person's unique physical characteristic, with the most commonly used biometric being fingerprints.
  - a. Which type of reader uses the patterns found in the coloured ring of tissue that is found around the pupil to identify the user?
  - b. List two places where this device is used.
  - c. What other scanner uses the eye as a form of identification?
  - d. Biometric devices are excellent in verifying a person's identity. List two advantages and two disadvantages.

*Output (Basic concepts, features and uses)*

- Audio output: What is an audio output device?
  - o Headsets and speakers
- Other output
  - o Fax/Fax Modem, Multifunction devices, Data/DLP projector

**Activity**

1. What is an output device?
2. Match the terms in Column A with the descriptions in Column B.

COLUMN A		COLUMN B	
1.	Headsets are also referred to as _____	A.	Projector
2.	Converts data into sound	B.	Watts
3.	Multi-functional device	C.	Speaker
4.	Replaces the image on the monitor and magnifies the image on the screen	D.	Earphones
5.	The loudness of a speaker	E.	Printer

## Storage media and devices (Basic concepts, features and uses)

- CDs, DVDs, Blu-Ray
- Memory cards

### Activity

Many storage devices are available currently

1. Which type of storage device is best used in a smartphone?
2. Briefly describe the storage device you mentioned in (2).
3. List 3 additional storage devices
  - a. Give 1 advantage of each device.
  - b. Give 1 disadvantage of each device.

## Processing

- Overview of the basic concepts and introduction of the system unit:
  - o Motherboard, CPU, Memory (RAM, ROM)
  - o Measuring speed in GHz

### Activity

Research each of the following processing devices:

-  Motherboard
-  CPU
-  RAM
-  ROM

- a. Describe each device.
- b. Their role (use) in a computer and
- c. The importance thereof.

To do so, you need to do the following:

1. Create a PowerPoint presentation with a maximum of eight slides (containing a cover, content and reference slide) on the research of the assigned topic.
2. You will present the research done on the topic.

### Consolidation Activity (Revision)

For questions 1 and 2, write down the number of the question and the letter that matches the correct answer, e.g. 9 C.

1. Which of the following devices is MOST likely to have a touchpad? (1)
  - A. Desktop computer
  - B. Foldable keyboard
  - C. Laptop computer
  - D. Touch-screen monitor
2. Which of the following is NOT a pointing device? (1)
  - A. Trackball
  - B. Stylus
  - C. Digital camera
  - D. Joystick
3. Petrus works in the office of a large company. One of his responsibilities is to scan many documents and store them in digital format on the company server. Some of the documents can be up to 20 pages long. Should the company use a stand-alone flatbed scanner, or a scanner included with a multi-functional printer? Give a reason for your choice. (3)
4. Many people have a small RFID chip implanted in their pets. The chip stores a unique identification number. If the pet goes astray and is found by someone else, it can be taken to a veterinary practice where the vet can use an RFID scanner to check who owns the pet.
  - a. What do the letters RFID stand for? (1)
  - b. Mention one other use for RFID chips. (1)

5. Study the image below showing the components inside a desktop computer's tower.



- a. What is the function of the motherboard? (2)
- b. Without referring to the human brain, explain what the function of the CPU is. (2)
- c. Computers have two types of memory, RAM and ROM. Compare RAM with ROM by listing two differences between them. Write your answer in a table format. (5)

6. List two devices that use memory cards as additional storage. (2)

7. CDs, DVDs and Blu-ray discs can all be used as storage media.

- a. Which of these storage media has the lowest capacity? (1)
- b. Which of these storage media would be most suitable to distribute a 3D movie?(1)

8. In many places, you will find images like the one below that take you to a website or resource when scanned.



- a. This image looks like a barcode in two dimensions. What is it called? (1)
- b. What software do you need to scan the image? (1)
- c. Use a smartphone to scan the image. Write down the URL of the website that it opens. If you do not have a smartphone, ask a friend or your teacher to help you.(1)

9. Chris Hani Secondary School has installed a fingerprint scanner. Staff have to use the scanner when they arrive at school and again when they leave. The scanner software is used to keep records on staff attendance.

- a. The fingerprint scanner is a biometric input device. Explain briefly what is meant by biometric input. (2)
- b. Name one other type of biometric scanner. (1)

10. Faizal has bought a portable speaker from an online shopping site.

The following specifications were found on the website:



- a. Faizal wants to use the speaker to play the music that is stored on his smartphone. How would he connect his smartphone to the speaker? (1)
- b. Faizal wants to play music without connecting to his smartphone. Which two storage media could he use? (2)

Work to be completed in 13 to 16 April:

Module 2.1 – Introducing Networks (p.88 – 93)

- Overview of the basic concepts and introduction to networks: What is a network?
- Aims and objectives of networks
- Advantages such as facilitating communications and sharing hardware, software, data and information; and electronic funds transfer (EFT)
- Disadvantages such as security and privacy issues
- Internet as an example of a network

Activity

1. Write the correct answer to the questions below in your book:
  - a. In computer networks, computing devices are called...
    - A. Computers
    - B. Nodes
    - C. Modems
    - D. Switches
  - b. A PAN is a...
    - A. Network that operates in a large area, such as across a country
    - B. Network built for a single person connecting all the devices
    - C. Very small network that usually covers a single home
    - D. Network that operates in a small area, such as a house, school or office

- c. A switch is a device that...
  - A. Shares information between specific computers without involving the other computers in the network
  - B. Makes the decisions about all the messages that pass through the network
  - C. Connects a computer or network to the internet
  - D. Allows computing devices to connect to a wireless network without cables
  
- d. Ethernet...
  - A. Is a set of rules that define the way in which two networking nodes can communicate
  - B. Is a type of data link protocol that defines the types of cables and connections used to wire computers, switches and routers together
  - C. Connects a computer or network to the internet
  - D. Can remove computers from the network and restrict access to users
  
- e. The people who can modify and change the network settings are called the...
  - A. Network technicians
  - B. Computer nerds
  - C. Network administrators
  - D. Gamers

## Activity

### **Discuss the following:**

1. Will you open an email sent to you from someone you do not know? Motivate your answer.
2. How will you know that something (an email, website, etc.) is dodgy? What would you do in such a case?
3. What can you do to ensure that you do not get a virus like that?

## Activity

The “Blurred Lines case” made the news when Pharrell Williams and Robin Thicke were accused of copying Marvin Gaye’s music to create “Blurred Lines”. This was the most popular song in 2013. Marvin Gaye’s children were awarded \$7.4 million since the jury was in favour of their claims.

### Answer the following questions:

1. Why was it seen as plagiarism? What did they do wrong?
2. What do you think about plagiarism – should the law continue working against plagiarism? Why or why not?

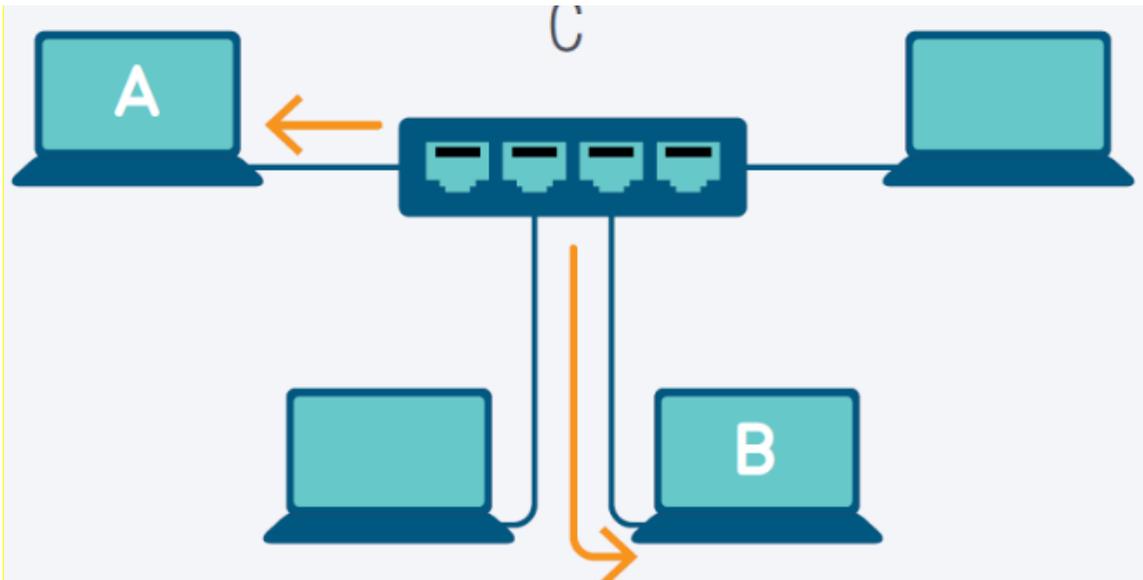
## Activity

Miss Furry wants to network the computers and other hardware devices in her office. She shares a printer with three other people. She was told she would need a switch, router and a modem.

1. Define a computer network.
2. Answer the following questions with reference to the scenario above:
  - a. Give two advantages of creating a network for Miss Furry.
  - b. List one type of hardware device that she can connect to the network.
  - c. Is this hardware (your answer for question b above) an input or output device? Motivate your answer.
  - d. Briefly explain how Miss Furry can use the network to communicate with others.
3. Explain what the internet is.
4. An organisation cannot just share software over a network.
  - a. Provided that this statement is true. What can an organisation do to share software?
  - b. Briefly give a description of a network license.
  - c. Explain what a site license is.

## Consolidation Activity

1. What is a computer network? (4)
2. Your school is planning to network its 25 stand-alone computers.
  - a. List two advantages to the school of installing a network. (2)
  - b. List two disadvantages to the school of installing a network. (2)
  - c. Apart from a network server and cabling, what other hardware would the school need when installing the network? (2)
3. The diagram below shows a simple network. Use the diagram to answer the following questions:



- a. What are A and B? (2)
  - b. What is device C? There are two possible answers. List both of them. (2)
  - c. Which device is receiving information? (1)
4. "The internet is an example of a computer network." Is this statement true or false? (1)
5. Reinet is doing research for her PAT. She finds an interesting website on the internet. When she prepares her final presentation, she copies large sections of text from the website and pastes them into her presentation.

- a. Is Reinet allowed to copy sections of text into her presentation and pretend that she wrote it herself? Give a reason for your answer. (2)
- b. Give one word for what Reinet has done. (1)

Written Module Activity p.93