

kasneb

DICT LEVEL II

COMPUTER SUPPORT AND MAINTENANCE

TUESDAY: 18 May 2021.

Time Allowed: 3 hours.

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

QUESTION ONE

- (a) Highlight five sources of computer viruses. (5 marks)
- (b) Explain the following terms as used in system selection and acquisition:
- (i) Cost benefit analysis. (2 marks)
 - (ii) Software Requirement Specifications (SRS). (2 marks)
 - (iii) With reference to computer system selection and acquisition, propose three contents covered in a laptop warranty. (3 marks)
- (c) Differentiate between a “Personal Computer (PC) support technician” and a “Help Desk technician”. (4 marks)
- (d) A computer technician intends to limit the chances of electrostatic discharge (ESD) affecting the work space. Suggest four precautions that he should take to limit ESD. (4 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Explain how to troubleshoot the following display adaptor problems:
- (i) Screen is blank and power indicator is off. (2 marks)
 - (ii) Screen goes off after a period of inactivity. (2 marks)
- (b) Jane Aketch, an ICT student intends to install an application software on her laptop.

Required:

Explain to her the importance of each of the following tasks during the installation process:

- (i) Checking system requirements. (2 marks)
 - (ii) Going through the README file. (2 marks)
 - (iii) Rebooting the computer. (2 marks)
- (c) Summarise the general procedure of installing a Central Processing Unit (CPU). (10 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Mary Mahugu’s computer hard drive has bad sectors.

Required:

- (i) Describe the bad sector scenario on a hard drive, citing how it arises. (2 marks)
- (ii) Highlight three disadvantages of bad sector occurrence. (3 marks)
- (iii) Suggest three methods of repairing a bad sector under windows operating system. (3 marks)

**TD23 Page 1
Out of 3**

(b) Modern computing devices use touch screen interface.

Required:

Highlight four advantages of touch screen user interface.

(4 marks)

(c) Citing an example in each case, differentiate between “passive power protection” and “active power protection” in the context of power supply in computing. (4 marks)

(d) Distinguish between the following classifications of processor microarchitectures:

(i) “In-order processor” and “out-of-order processor”.

(2 marks)

(ii) “Scalar processor” and “superscalar processor”.

(2 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Explain the following types of mapping used for the purpose of cache memory:

(i) Associative mapping.

(2 marks)

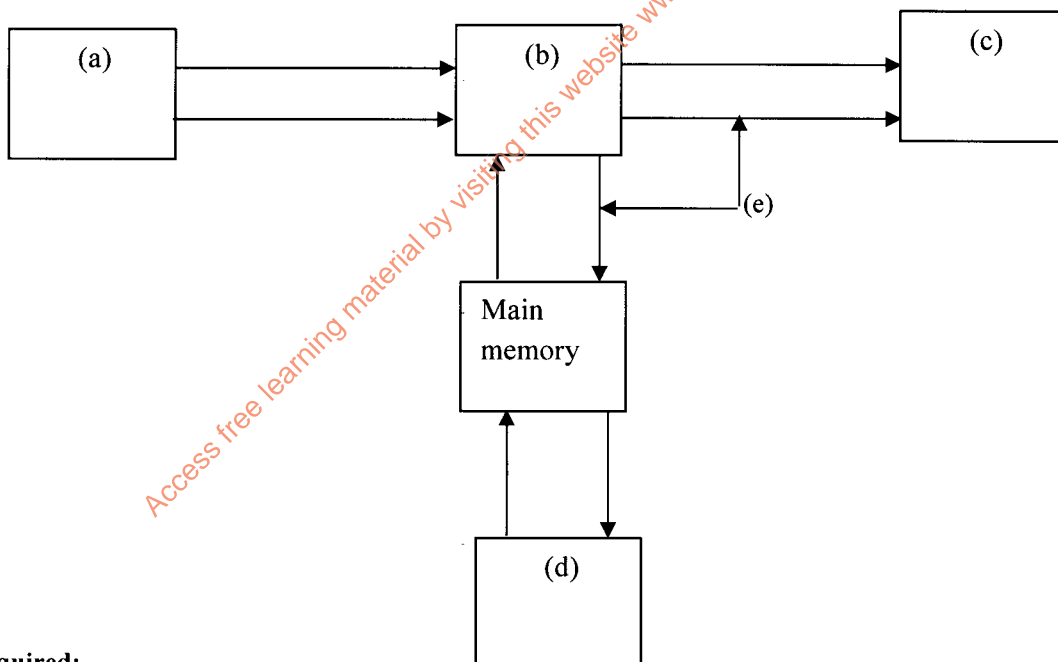
(ii) Direct mapping.

(2 marks)

(iii) Set-associative mapping.

(2 marks)

(b) The figure below illustrates the electronic components of a computer.



Required:

Name the parts labelled (a) to (e).

(5 marks)

(c) Tonny Mwalili, a technician at Uwezo Computers decided to assemble a computer at home. He bought a motherboard packaged in a pink foam covering.

Required:

(i) Explain to him the purpose of foam covering.

(1 mark)

(ii) Analyse three critical issues he has to consider when assembling the motherboard to prevent computer overheating. (6 marks)

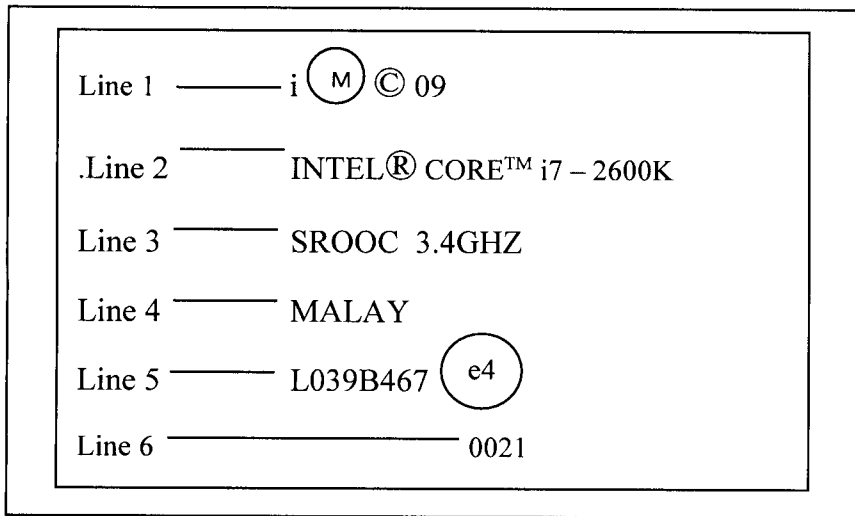
(iii) Advise him on the function of expansion slot which is a component of the motherboard.

(2 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Students in a college disassembled a computer and removed the processor bearing the following inscriptions:



Required:

Assist the students to identify the following:

- (i) Processor speed. (1 mark)
 - (ii) Country of manufacture. (1 mark)
 - (iii) Processor family. (1 mark)
 - (iv) Processor serial number. (1 mark)
 - (v) Processor compatibility guide. (1 mark)
- (b) Explain why you would do the following during computer troubleshooting and repair:
- (i) Unplug a computer you are about to work on and wait for several minutes before you begin working on it. (2 marks)
 - (ii) Enter into safe mode when troubleshooting problems with a monitor in a Windows XP system. (2 marks)
- (c) A disgruntled worker in a particular organisation deleted all the disciplinary files from the manager's computer.

Required:

Propose three logical measures the organisation should have put in place to avert such action. (6 marks)

- (d) Obadiah noted smoke emanating from his computer power supply unit and the computer system came to an abrupt halt.

Required:

Outline in five steps how he could remove the faulty power supply unit from his computer. (5 marks)

(Total: 20 marks)

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