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DICT LEVEL II

COMPUTER SUPPORT AND MAINTENANCE
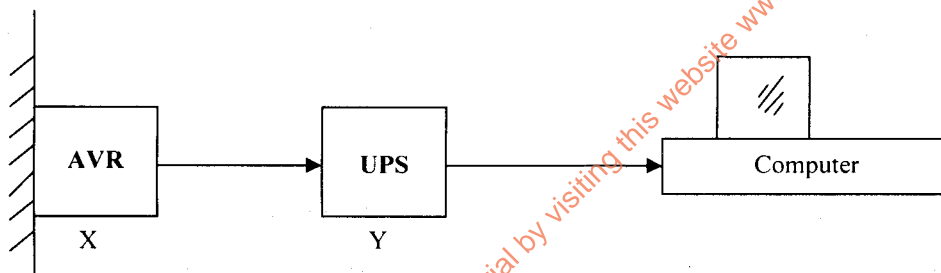
TUESDAY: 27 November 2018.   **Time Allowed: 3 hours.**

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

QUESTION ONE

(a)   Explain the term "cyberwarfare" in the context of computer security.   (2 marks)

(b)   Describe each of the following computer disk management techniques:

      (i)   Format drive.   (2 marks)

      (ii)   Partition drive.   (2 marks)

(c)   The diagram below shows a typical power supply to a computer system:

Required:
      (i)   Explain the functions of the devices labelled X and Y on the diagram.   (4 marks)

      (ii)   Give two alternatives to the device labelled Y on the diagram.   (2 marks)

(d)   Eddie Moraa has a malfunctioning personal computer and suspects that the processor is about to fail.

Required:
Suggest three indicators of a processor that is about to fail.   (3 marks)

(e)   Naliaka Maua's laptop has a number of redundant software that are slowing it down. She intends to remove them and has approached you for help.

Required:
Outline to her five steps of uninstalling a program.   (5 marks)
(Total: 20 marks)

QUESTION TWO
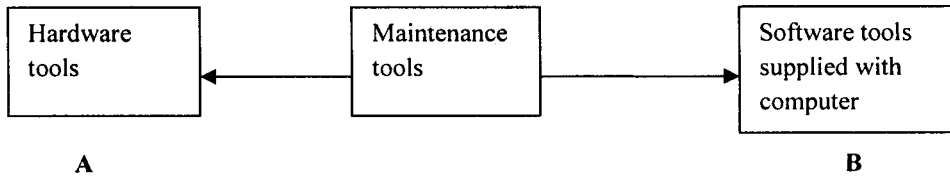(a)   State four types of processors.   (4 marks)

(b)   Propose six features to look for in your next generation firewall.   (6 marks)

(c)   Argue four cases in favour of installing two operating systems in one machine.   (4 marks)

(d)   Identify six common symptoms associated with faulty computer display unit.   (6 marks)
(Total: 20 marks)

QUESTION THREE

(a)   Study the diagram below of computer repair and maintenance tools:

| Hardware tools | ← | Maintenance tools | → | Software tools supplied with computer |

A   B

Required:
Give three examples of maintenance tools under category:

    (i)   A.   (3 marks)

    (ii)   B.   (3 marks)

(b)   Explain the importance of each of the following features in a computer:

    (i)   Expansion slot cover.   (2 marks)

    (ii)   RAM heat spreader.   (2 marks)

(c)   Distinguish between "cold plugging" and "hot swapping" as used in computer assembly.   (4 marks)

(d)   A supermarket cashier noted that an optical scanning peripheral device attached to his computer was not responding.

Required:
Explain three steps he might take to ascertain whether the port in the port cluster is damaged.   (6 marks)

(Total: 20 marks)

QUESTION FOUR

(a)   Outline four benefits of preventive maintenance.   (4 marks)

(b)   Summarise two differences between central processing unit (CPU) and graphics processing unit (GPU).   (4 marks)

(c)   Killian Mosoti an IT technician realised that after installing a new motherboard, it failed to work.

Required:
Advise him on six issues that he should check to troubleshoot.   (6 marks)

(d)   Highlight four advantages and two disadvantages of the cache memory over main memory.   (6 marks)

(Total: 20 marks)

QUESTION FIVE

(a)   (i)   Explain the term "service level agreement" in the context of computer maintenance.   (2 marks)

    (ii)   Identify three components included in a service level agreement.   (3 marks)

(b)   Discuss the following terms as used in computer security:

    (i)   Identity management.   (2 marks)

    (ii)   Two factor authentication.   (2 marks)

    (iii)   Unified threat management systems.   (2 marks)

(c)   Outline three advantages of unified extensible firmware interface (UEFI) over traditional BIOS system.   (3 marks)

(d)   Examine three techniques used to protect computer technicians and equipment from electrostatic discharge (ESD) when working with computer components.   (6 marks)

(Total: 20 marks)

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