



THE CO-OPERATIVE UNIVERSITY OF KENYA

END OF SEMESTER EXAMINATION DECEMBER -2022

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER
SCIENCE, INFORMATION TECHNOLOGY
(YR III SEM I)**

UNIT CODE: BCSC 3154

UNIT TITLE: PC TROUBLESHOOTING AND MAINTENANCE

DATE: THURSDAY, 15TH DECEMBER, 2022

TIME: 2:00 PM – 4:00 PM

INSTRUCTIONS:

- **Answer question ONE (compulsory) and any other TWO questions**

QUESTION ONE

(a) Define the following terms;

- | | |
|-------------------------------------|-----------|
| i. System unit | [2 marks] |
| ii. Expansion slot | [2 marks] |
| iii. Pert | [2 marks] |
| iv. Display adapter | [2 marks] |
| v. Basic input output system (BIOS) | [2 marks] |

(b) During the troubleshooting and repair of PCs, tools are a vital requirement. Describe the essence of the following PC repair tools.

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|------------------------|-----------|
| i. Break-out boxes | [1 marks] |
| ii. Loop back adapter | [1 marks] |
| iii. POST card | [1 marks] |
| iv. Multimeter | [1 marks] |
| v. USB network adapter | [1 marks] |

(c) Christine, a client of your company, calls and reports that her computer has stopped responding. On checking her computer you realize the mouse pointer is moving, but nothing else works, sometimes it reboots itself automatically. What could be the problem with that computer and how would you isolate that problem. [10 marks]

(d) Differentiate clearly between cache RAM and CMOS RAM. [5 marks]

QUESTION TWO

(a) Using examples, differentiate between active preventive maintenance and passive preventive maintenance procedure. [6 marks]

(b) Using a clearly labeled diagram, outline the operating principles of the power supply unit. [8 marks]

- (c) What is the essence of documenting when troubleshooting and repairing PCs. [2 marks]
- (d) Describe any two considerations you have to cater for before you begin troubleshooting a PC problem. [4 marks]

QUESTION THREE

- (a) Briefly discuss any two motherboard form factors. [6 marks]
- (b) What are device drivers with regard to computer hardware? [2 marks]
- (c) The hard disk drive is a nonvolatile, secondary storage device for digital data. Using a well labeled diagram, explain the operating principles of the hard disk. [8 marks]
- (d) Determine the capacity of a hard disk drive with 15 heads, 1632 cylinders and 54 sectors per track. [4 marks]

QUESTION FOUR

- (a) While hardware components are not extremely delicate they aren't indestructible either, they are susceptible to electrical damage. State and briefly explain three ways that can be used to minimize the risk of damage [6 marks]
- (b) Describe any three factors to consider when attempting to purchase a high quality hard drive. [6 marks]
- (c) Discuss any four processor operating modes. [8 marks]

QUESTION FIVE

- (a) Discuss in detail the process of installing an Operating system the various considerations before installing an Operating system in a machine [8 marks]
- (b) Ethernet cables can be wired as straight through or crossover.
- a. List two **Wiring Standard Basis** [2 marks]
 - b. Differentiate using a diagram in the above [2 marks]
- (c) What is a system unit? Give two types of a system unit and 2 major components of the system unit. [4 marks]
- (d) List and explain any five general functions of an operating system. unit [4 marks]