

KASNEB

CICT PART I SECTION 1

INTRODUCTION TO COMPUTING

MONDAY: 23 May 2016.

Time Allowed: 3 hours.

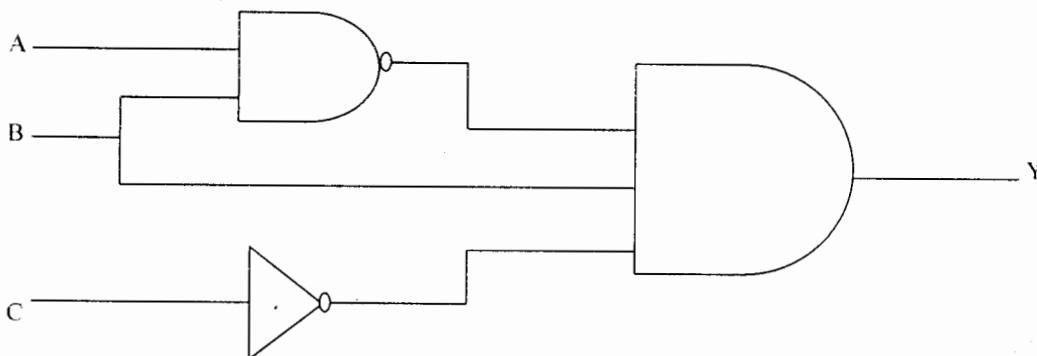
Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

- (a) (i) Describe the term "bandwidth". (2 marks)
- (ii) Explain the importance of bandwidth in data transmission. (2 marks)
- (b) (i) Convert the following binary numbers to the stated base:
- 1101101011 base 8. (1 mark)
 - 101101101011010 base 16. (2 marks)
- (ii) Calculate the following giving the sum in hexadecimal:
 $574_8 + 17C_{16}$ (4 marks)
- (c) There are several basic types of system software that are essential for a computer to function correctly.
- Required:**
- (i) Outline three system software components. (3 marks)
- (ii) Highlight the main function of each of the components mentioned in (c)(i) above. (6 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) Describe the following computer startup terms:
- (i) Bootstrap loader. (2 marks)
- (ii) Boot sequence. (2 marks)
- (b) There are several categories of application software. Among them is business speciality software.
- Required:**
Identify four examples of business speciality application software. (4 marks)
- (c) (i) Define the term "flash memory". (2 marks)
- (ii) Explain three advantages and one disadvantage of flash memory. (4 marks)
- (d) You have been given the following logic diagram:



Construct a truth table from the above diagram.

(6 marks)
(Total: 20 marks)

QUESTION THREE

- (a) Explain the following terms as used in computers:
 - (i) Baud rate. (2 marks)
 - (ii) Block. (2 marks)
 - (iii) Double buffering. (2 marks)
 - (iv) Packet. (2 marks)
- (b) Contrast between computer primary storage and computer secondary storage. (8 marks)
- (c) On reporting to work one morning, you realised the computer could not boot, but presented you with a blank screen.

Required:

Highlight four checkpoints you would focus on in an attempt to troubleshoot your computer. (4 marks)
(Total: 20 marks)

QUESTION FOUR

- (a) (i) Identify four data capture devices that are used for direct data input. (4 marks)
 - (ii) Summarise four advantages of direct data capture. (4 marks)
 - (b) Cite four elements that should be controlled in a computing environment. (4 marks)
 - (c) Outline four challenges of using databases. (8 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) All modern desktop computers support multitasking and some also have multiprocessing.
 - (i) Define the term "multitasking". (2 marks)
 - (ii) Explain how multiprocessing improves the speed of a desktop computer. (2 marks)
 - (b) Many modern hard disks have a buffer or cache memory.
Describe how the buffer or cache memory has improved the efficiency of the computer system. (4 marks)
 - (c) Computer networks require communication channels through which signals are transmitted.
 - (i) Differentiate between a digital signal and an analogue signal. (4 marks)
 - (ii) Justify why analogue signals require a continuous connection between the sender and the receiver. (2 marks)
 - (d) Citing an example in each case, differentiate between a dedicated computer and a general purpose computer. (6 marks)
- (Total: 20 marks)**
-