FINAL

ALTERNATIVE ASSESSMENT

(COVER PAGE)

Session	:	**April 2022**
Programme	:	Certificate in Information Technology (CIT)
Course	:	**CIT1001: Introduction to Computer Architecture and Organisation**
Date of Examination	:	August 1, 2022 (Monday)
Time	:	12:00pm – 2:30pm Reading Time : Nil
Duration	:	2 hours 30 minutes

Special Instructions :

Answer **ALL** questions.

Note: 30 minutes is added into the duration of the examination to factor in any connectivity matters and for you to scan and upload your scripts.

Material permitted

NIL

Materials provided :

NIL

Examiner(s)	:	**Ms Lusiana Syaiful a**nd Ms Norashida binti Sabari
Chief Moderator	:	Ms Nuur Shuhada Mohd Najib

*This paper consists of **4** printed pages, including the cover page*

CERTIFICATE IN INFORMATION TECHNOLOGY PROGRAMME (CIT)
CIT1001: INTRODUCTION TO COMPUTER ARCHITECTURE AND ORGANIZATION
FINAL ALTERNATIVE ASSESSMENT: APRIL 2022 SESSION

Instructions: This paper consists of **TWO (2)** sections. Answer **ALL** questions.

SECTION A

1. A _____ is a collection of tools for the control of these operations as well as the movement, storing, and processing of data.

2. A _____ supervises the operations of the computer's functional components in response to commands and controls the computer's resources.

3. The first generation of computers used _____ for digital logic elements and memory.

4. Second generation of computer is _____.

5. _____ refers to the use of electronics and software within a product, as opposed to a general-purpose computer, such as a laptop or desktop system.

6. _____ enables small businesses and individual users to take advantage of data storage that scales with their needs.
7. _____ specifies the address in memory for the next read or write.

8. _____ is used to designate the source or destination of the data on the data bus.

9. The basic element of a semiconductor memory is the _____.

10. A _____ is made with cells that store data as charge on capacitors.

11. Software is a _____ or instructions.

12. A _____ contains a permanent pattern of data that cannot be changed.

13. A _____ is a storage device that uses integrated circuit assemblies to store data persistently.

14. In context of RAID, _____ is when all member disks participate in the execution of every I/O request.

15. _____ is when the disk rotates more slowly for access near the outer edge than near the center.

16. When the user depresses a key it generates an _____ that is interpreted by the transducer in the keyboard.

17. The I/O function includes a _____, to coordinate the flow of traffic between internal resources and external devices.

18. A computer program's common services are managed by an _____, which is system software.

19. A circular platter known as a _____ is made of the substrate, a nonmagnetic material, and magnetizable material.

20. Performance and _____ are the two most crucial aspects of memory.

(40 marks)

SECTION B

Question 1

(a) List and explain **FOUR (4)** main structural components of the computer.

(4 marks)

(b) IBM System/360 was first announced with 1964. It was the industry's first planned family of computers. Briefly list **SIX (6)** the characteristics of family computers.

(6 marks)

(c) List and briefly define **FIVE (5)** techniques used in contemporary processors to increase speed.

(10 marks)

[20 marks]

Question 2

(a) The basic function performed by a computer is execution of a program which consists of a set of instructions stored in memory. By using a diagram, illustrate the basic instruction cycle.

(5 marks)

(b) How does SDRAM differ from ordinary DRAM?

(3 marks)

(c) List **THREE (3)** benefits of the glass substrate for a magnetic disk.

(3 marks)

(d) Define the terms track, cylinder, and sector for internal memory.

(3 marks)

(e) List and explain **THREE (3)** broad classifications of external, or peripheral, devices.

(6 marks)

[20 marks]

Question 3

(a) Convert the following (show all working with 5 decimal places):

i. 673_8 to hexadecimal

ii. 25_{10} to binary

iii. 100110101_2 to octal

(10 marks)

(b) Construct the truth table for the following:

(A+B) (A+C) (¬A+ ¬B)

(5 marks)

(c) Develop an assembly language program to perform the arithmetic operations below by only using registers AX and BX.

$26_{10} + (136_{10} – 95_{10}) + 79_{10}$

(5 marks)

[20 marks]

-THE END-