

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

CHUKA/EMBU

FIRST YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE IN
COMPUTER SCIENCE

COSC 00101: COMPUTER SYSTEMS AND ORGANIZATION

STREAMS: CERT COMP SCI. Y1S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 10/12/2019

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, no reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.

SECTION A (ANSWER ALL QUESTIONS IN THIS SECTION)

QUESTION ONE (30 MARKS)

1. Mercy, a student of the Education Faculty, wants to buy a new laptop, how would you advise Mercy to check specifications of laptops she's interested in [Hint:Windows version, RAM, hddsk, GPU speed]

[4 marks]

2. Define Following Terms in Computer Systems:

[6 marks]

i. Computer System Organization

[2 marks]

ii. Computer System

[2 marks]

iii. BIOS/Basic Input Output System

[2 marks].

3. Distinguish the following Terms:

[9 marks]

i. Random Access memory and Read Only memory

[3 marks]

- ii. System software and application software [3 marks]
- iii. Supercomputer and Mainframe [3 marks]
- 4. Express 1TB/Terabyte in Bytes [2 marks]
- 5. EXPLAIN Index Sequential Access Method, How is it related to Sequential Access Method [4 marks]
- 6. What is the difference between L1,L2 and L3 in a CPU? [2 marks]
- 7. Binary Number : 10101_2 , Calculate it's Octal Equivalent [3 marks]

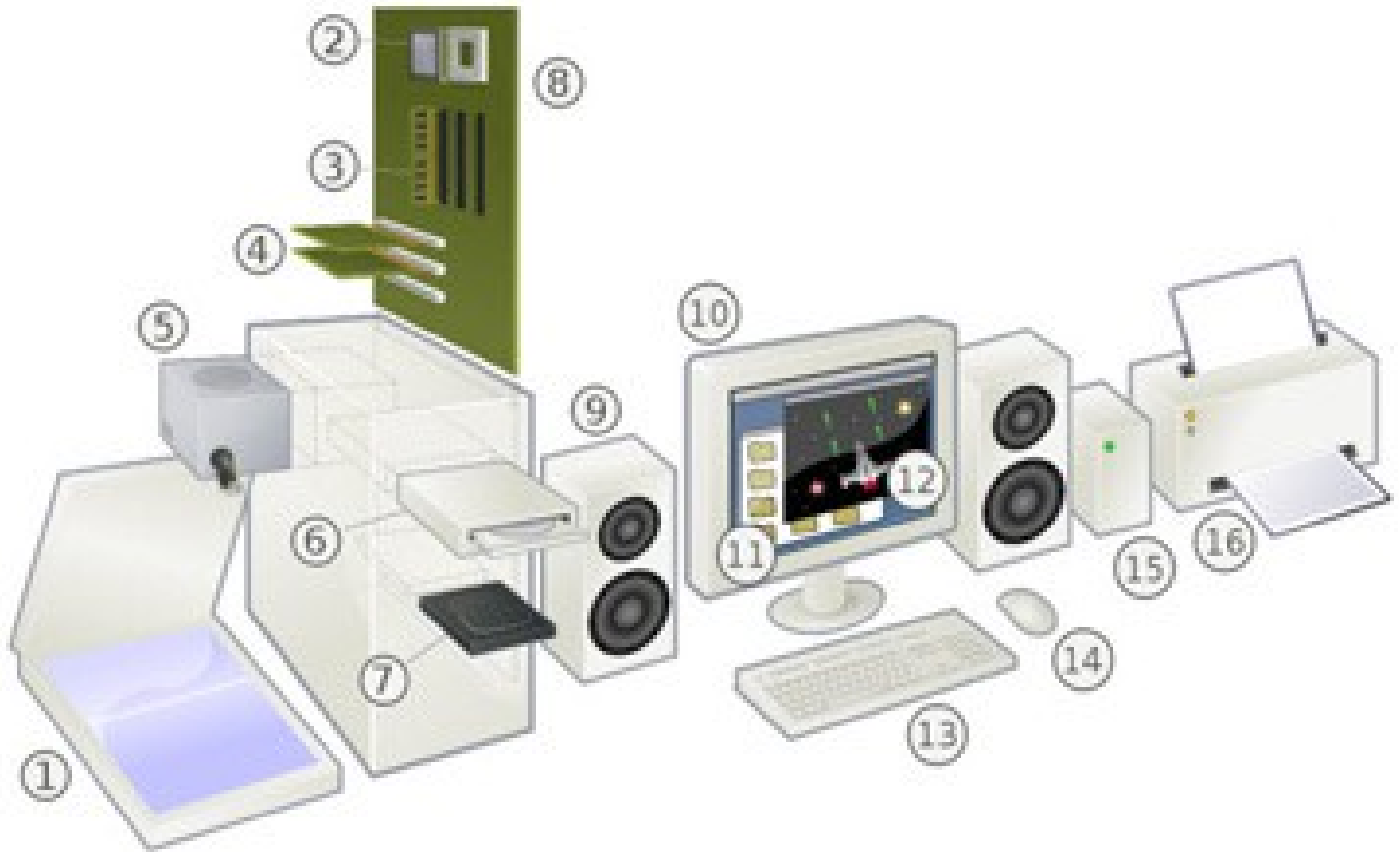
SECTION B (ANSWER ONLY TWO QUESTIONS IN THIS SECTION)

QUESTION TWO (20 MARKS)

- 1. EXPLAIN the following types of Memory: [10 marks]
 - i. Static RAM [2 marks]
 - ii. Dynamic RAM [2 marks]
 - iii. PROM [2 marks]
 - iv. EPROM [2 marks]
 - v. EEPROM [2 marks]
- 2. List FIVE Differences between Primary and Secondary Memory [10 marks]

QUESTION THREE (20 MARKS)

1. Below is a Picture of a Personal computer System, Name the numbered components and state their functions [16 mks]

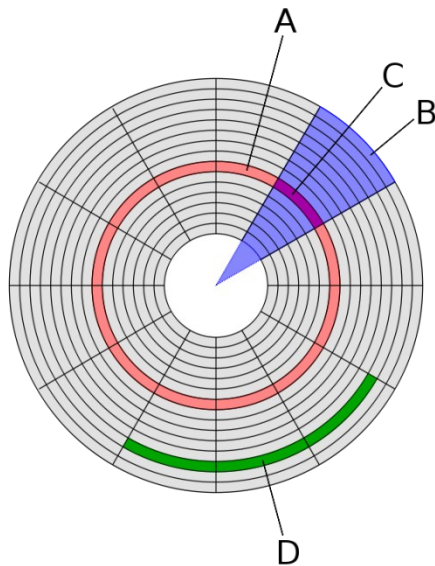


2. A student asks you why their Dell laptop keeps shutting off suddenly without prompting, as a computer scientist, how would you go about repairing the Laptop [4 marks]

QUESTION FOUR (20 MARKS)

1. Explain Disk Structures of BELOW Demonstrated Disk Sector

[8 marks]



2. EXPLAIN the following Terms:

[12 marks]

i. Booting Process, state the TWO Types of booting

[4 marks]

ii. Assembler

[2 Marks]

iii. Anti-virus

[2 Marks]

iv. Von Neumann architecture

[4 marks]

QUESTION FIVE (20 MARKS)

1. What is ASCII, LIST 3 SECTIONS THAT MAKE UP ASCII TABLE

[4 Marks]

2. Convert Following:[10 Mks]

i. Compute 1's and 2's complements of the following binary: 10011110. [2 marks]

ii. Convert 5746_8 to decimal number

[3 marks]

iii. Hexadecimal Number : 15_{16} , Calculate the Base 2 Equivalent

[3 marks]

iv. 0.375 base 10 to binary

[2 marks].

3. Explain three main types of system buses

[6 marks]

