Republic of the Philippines
SULTAN KUDARAT STATE UNIVERSITY
COLLEGE OF COMPUTER STUDIES
MIDTERM EXAMINATION
MARCH 19-21, 2025

Architecture and Organization

I. Multiple Choice: Choose the correct answer. Write the letter of the correct answer in the Test Booklet.

1. Which part of the computer temporarily holds program instructions and data?
    a. Hard Drive
    b. CPU
    c. RAM
    d. ROM
2. Which component performs all arithmetic and logical operations?
    a. ALU
    b. Control Unit
    c. Memory Unit
    d. Cache
3. Which of the following is a non-volatile memory?
    a. RAM
    b. Cache
    c. DRAM
    d. ROM
4. The main components of a computer system are
    a. I/O unit
    b. CPU
    c. Memory Unit
    d. All of the above
5. Which of the following is a type of computer architecture?
    a. Microarchitecture
    b. Harvard Architecture
    c. Von-Neumann Architecture
    d. All of the above
6. Which of the following is a type of architecture used in computers nowadays?
    a. Microarchitecture
    b. Harvard Architecture
    c. Von-Neumann Architecture
    d. System Design
7. To reduce the memory access time we generally make use of _____.
    a. SDRAM
    b. Heaps
    c. Cache
    d. Higher Capacity RAM
8. What is the main function of the Control Unit in a computer?
    a. To execute instructions
    b. To transfer data between input and output devices
    c. To perform arithmetic operations
    d. To store data
9. What is the characteristic of Von Neumann architecture?
    a. Shared memory for data and instructions
    b. Separate memory for data and instructions
    c. Multiple CPUs
    d. No memory
10. What is the binary representation of the decimal number 10?
    a. 1010
    b. 1110

c. 1100
d. 1001

11. Which number system uses base 16?
    a. Binary
    b. Hexadecimal
    c. Octal
    d. Decimal
12. What is the decimal equivalent of the binary number 1101?
    a. 12
    b. 13
    c. 15
    d. 14
13. Which number system is commonly used in computer memory addressing?
    a. Hexadecimal
    b. Registers
    c. Cache
    d. Binary
14. How many bits are required to represent a single hexadecimal digit?
    a. 2
    b. 6
    c. 8
    d. 4
15. What is the result of converting the hexadecimal number 2A into decimal?
    a. 48
    b. 32
    c. 42
    d. 40

II. Problem Solving: Determine what is/are being asked.

16. Convert the decimal number 109 to:
    a. Binary
    b. Octal
    c. Hexadecimal
17. Add the binary numbers. 10101111 and 00010011
18. Determine the 2's complement of -510
19. Simplify the following Boolean expressions:

    a. A(A+A') + B
    b. (A+B)(A'+B) B'
20. Multiply the numbers -12 and 23 using booth algorithm.

Prepared by:

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