1. **Which of the following is NOT a type of micro-operation?**
   - a) Arithmetic
   - b) Logic
   - c) Control
   - d) Shift

   Answer: c) Control

2. **Which type of instruction cycle involves the CPU processing data and performing operations?**
   - a) Fetch
   - b) Execute

   Answer: b) Execute

3. **Which type of computer architecture has a large number of simple instructions?**
   - a) Reduced Instruction Set Computer (RISC)
   - b) Complex Instruction Set Computer (CISC)
   - c) Both RISC and CISC
   - d) None of the above

   Answer: a) Reduced Instruction Set Computer (RISC)

4. **Which type of computer architecture has a large number of complex instructions?**
   - a) Reduced Instruction Set Computer (RISC)
   - b) Complex Instruction Set Computer (CISC)
   - c) Both RISC and CISC
   - d) None of the above

   Answer: b) Complex Instruction Set Computer (CISC)

5. **Which of the following registers stores the memory address of the next instruction to be fetched?**
   - a) Instruction Register
   - b) Program Counter
   - c) Memory Address Register

- d) Memory Buffer Register

Answer: b) Program Counter

6. **The time taken to complete one instruction cycle is called:**
   - a) Processing time
   - b) Execution time
   - c) Instruction time
   - d) Clock cycle time

   Answer: c) Instruction time

7. **In computer arithmetic, Booth's algorithm is used for:**
   - a) Addition
   - b) Subtraction
   - c) Multiplication
   - d) Division

   Answer: c) Multiplication

8. **Which programming language is closest to machine language?**
   - a) Assembly Language
   - b) High-level Language
   - c) Object-oriented Language
   - d) Scripting Language

   Answer: a) Assembly Language

9. **Which construct is used to repeat a set of instructions in high-level programming?**
   - a) Looping Construct
   - b) If-Else Construct
   - c) Switch-Case Construct
   - d) Function/Procedure Construct

Answer: a) Looping Construct

10. **Which type of instruction is used in assembly language programming to perform arithmetic and logic operations?**

- a) ALU Instruction
- b) Control Instruction
- c) Memory-Reference Instruction
- d) Input-Output Instruction

Answer: a) ALU Instruction

11. **Which of the following is responsible for generating micro-instructions in a microprogrammed control unit?**

- a) Control Memory
- b) Address sequencing
- c) Micro program example
- d) Design of Control Unit

Answer: a) Control Memory

12. **The register transfer language is used for:**

- a) Defining micro-operations
- b) Defining assembly language
- c) Defining high-level language
- d) Defining computer architecture

Answer: a) Defining micro-operations

13. **In a microprogrammed control unit, the design of the control unit involves:**

- a) Designing the datapath
- b) Designing the instruction set
- c) Designing the finite state machine
- d) Designing the memory

Answer: c) Designing the finite state machine

14. **Which of the following is responsible for performing arithmetic and logical operations in the CPU?**

- a) Control Unit
- b) Arithmetic and Logic Unit (ALU)
- c) Memory Unit
- d) Input-Output Unit

Answer: b) Arithmetic and Logic Unit (ALU)

15. **Which addressing mode allows the use of an address register and an index register to calculate the effective address of an operand?**

- a) Direct Addressing Mode
- b) Indexed Addressing Mode
- c) Immediate Addressing Mode
- d) Register Addressing Mode

Answer: b) Indexed Addressing Mode

16. **DMA stands for:**

- a) Direct Memory Access
- b) Data Memory Allocation
- c) Direct Memory Allocation
- d) Data Memory Access

Answer: a) Direct Memory Access

17. **Which type of instruction accesses memory for both operands?**

- a) Register-Reference Instruction
- b) Memory-Reference Instruction
- c) Input-Output Instruction
- d) None of the above

Answer: b) Memory-Reference Instruction

18. **Which memory organization scheme allows for parallel access to memory locations?**
    - a) Hierarchical Memory
    - b) Associative Memory
    - c) Cache Memory
    - d) Segmented Memory

    Answer: b) Associative Memory

19. **Which memory technology provides the fastest access time?**
    - a) Cache Memory
    - b) Auxiliary Memory
    - c) Hard Disk
    - d) None of the above

    Answer: a) Cache Memory

20. **Which of the following is a non-volatile memory?**
    - a) Cache Memory
    - b) RAM
    - c) Hard Disk
    - d) Register

    Answer: c) Hard Disk

21. **Which of the following is used to transfer data between two registers in a computer?**
    - a) Bus
    - b) Memory
    - c) Control unit
    - d) Accumulator

    Answer: a) Bus

22. **What is the purpose of a shift micro-operation in a computer?**
    - a) To transfer data from one register to another

- b) To perform arithmetic operations on binary numbers
- c) To manipulate the bit positions of binary numbers
- d) To perform logical operations on binary numbers

Answer: c) To manipulate the bit positions of binary numbers

Here's the comparison of the two sets of questions, where I have removed repeated ones and organized the rest properly:

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- a) Control Memory

- b) Address sequencing

- c) Microprogram Example

- d) Design of Control Unit

Answer: a) Control Memory

11. What is the purpose of address sequencing in a microprogrammed control unit?

- a) To generate micro-instructions
- b) To store control signals
- c) To fetch instructions from memory
- d) To perform arithmetic and logical operations

Answer: a) To generate micro-instructions

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- d) None of the above

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- b) RAM
- c) Cache Memory
- d) Register

Answer: a) Hard Disk
