

Q.1 Select the correct choice from the following questions.

1. Abbreviation of CPU is:

A. Central Population Unit	B. Central Processing Unit
C. Central Publishing Unit	D. Control Processing Unit
2. It is also called the processor or microprocessor:

A. AU	B. CPU	C. CU	D. ALU
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3. ALU stands for:

A. Arithmetic and Local Unit	B. Align and Logic Unit
C. Arithmetic and Legal Unit	D. Arithmetic and Logic Unit
4. It is capable of performing arithmetic, logical and data manipulation operations on data:

A. AU	B. LU	C. CU	D. ALU
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5. CU stands for:

A. Circuit Unit	B. Control Unit	C. Center Unit	D. Compound Unit
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6. This unit directs and coordinates the activities of the entire computer system:

A. AU	B. CPU	C. CU	D. ALU
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7. Types of buses inside microprocessor are:

A. 3	B. 4	C. 6	D. 5
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8. It is also known as Index register:

A. Accumulator Register (AC)	B. Data Register (DR)
C. Base Register (BR)	D. Counter Register (CR)
9. It contains the address (location) of the instruction being executed at the current time:

A. Accumulator Register (AC)	B. Data Register (DR)
C. Base Register (BR)	D. Counter Register (CR)
10. This register holds program instructions that are fetched from the memory for execution:

A. Instruction Register (IR)	B. Memory Address Register (MAR)
C. Memory Buffer Register (MBR)	D. Program Counter (PC)
11. This register holds the address of memory location from where a memory word is to be fetched or where data is to be stored:

A. Instruction Register (IR)	B. Memory Address Register (MAR)
C. Memory Buffer Register (MBR)	D. Program Counter (PC)
12. This register acts as a buffer (a small temporary memory) allowing to microprocessor and memory unit to act independently without being affected by minor differences in operation:

A. Instruction Register (IR)	B. Memory Address Register (MAR)
C. Memory Buffer Register (MBR)	D. Program Counter (PC)
13. It controls the sequence in which instructions are fetched from memory:

A. Instruction Register (IR)	B. Memory Address Register (MAR)
C. Memory Buffer Register (MBR)	D. Program Counter (PC)
14. This bus is used by the CPU to select a memory word for a read or operation:

A. Address bus	B. Control bus	C. Data bus	D. Information bus
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15. Address width is from:

A. 16 to 32 bits	B. 8 to 16 bits	C. 1 to 10 bits	D. 16 to 100 bits
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16. A system with a 32-bit address bus can address _____ memory locations:

A. 2^{32}	B. 2^{10}	C. 2^{64}	D. 2^{16}
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17. It is unidirectional bus because information flows in only one direction:

A. Address bus	B. Control bus	C. Data bus	D. Information bus
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18. It is a bidirectional bus over which data can be sent from the microprocessor to memory or from the memory to the microprocessor:
 A. Address bus B. Control bus C. Data bus D. Information bus
19. Data bus width is from:
 A. 16 to 32 bits B. 32 to 64 bits C. 1 to 10 bits D. 16 to 100 bits
20. It is a group of wires that sends timing and control signals to all the parts of computer needed to carry out the instructions:
 A. Address bus B. Control bus C. Data bus D. Information bus
21. Control bus width is in the range of:
 A. 16 to 32 bits B. 2 to 64 bits C. 1 to 10 bits D. 8 to 16 bits
22. These instructions transfer data from one location in the computer to another location without changing the data content:
 A. Data Transfer Instructions B. Data Processing Instructions
 C. Program Control Instruction D. Batch Processing Instructions
23. This instruction transfers data from a memory location to a register, register to memory and register to register:
 A. MOV B. LOAD C. STORE D. SAVE
24. This instruction loads particular register contents from memory:
 A. MOV B. LOAD C. STORE D. SAVE
25. This instruction stores information from register to memory location:
 A. MOV B. LOAD C. STORE D. SAVE
26. These instructions are related to the arithmetic and logic operation:
 A. Data Transfer Instructions B. Data Processing Instructions
 C. Program Control Instruction D. Batch Processing Instructions
27. These instructions are used to perform arithmetic operations.
 A. Arithmetic Instructions B. Logical Instructions
 C. Shift Instructions D. Processing Instructions
28. These instructions are used to perform logical operations like AND, OR, NOT, etc..
 A. Arithmetic Instructions B. Logical Instructions
 C. Shift Instructions D. Processing Instructions
29. It is used for transfer of bits either to the left or to the right of an operand:
 A. Arithmetic Instruction B. Logical Instructions
 C. Shift Instructions D. Processing Instructions
30. This instruction format requires only op-code, having no operand to work with:
 A. Zero-Address Instruction B. One-Address Instruction
 C. Two-Address Instruction D. Three-Address Instruction
31. This instruction format requires one op-code and one operand:
 A. Zero-Address Instruction B. One-Address Instruction
 C. Two-Address Instruction D. Three-Address Instruction
32. This instruction format requires one op-code and two operands:
 A. Zero-Address Instruction B. One-Address Instruction
 C. Two-Address Instruction D. Three-Address Instruction

Answers:

1.	Central Processing Unit	2.	CPU
3.	Arithmetic and Logic Unit	4.	ALU
5.	Control Unit	6.	CU
7.	3	8.	Base Register (BR)
9.	Counter Register (CR)	10.	Instruction Register (IR)
11.	Memory Address Register (MAR)	12.	Memory Buffer Register (MBR)

13.	Program Counter (PC)	14.	Address bus
15.	16 to 32 bits	16.	2^{32}
17.	Address bus	18.	Data bus
19.	32 to 64 bits	20.	Control bus
21.	8 to 16 bits	22.	Data Transfer Instructions
23.	MOV	24.	LOAD
25.	STORE	26.	Data Processing Instructions
27.	Arithmetic Instructions	28.	Logical Instructions
29.	Shift Instructions	30.	Zero-Address Instruction
31.	One-Address Instruction	32.	Two-Address Instruction

Q.2 Give short answers of the following questions.

Q1: Define CPU.

Ans. The Central Processing Unit (CPU) is the main part of the computer, which performs all its activities. It is also called the processor or microprocessor and is truly the "brain" of the computer system. It combines the circuitry that generates all the control signals needed to execute instructions.

Q2: What are the main components of CPU?

Ans. The following are main components of CPU:

- ⇒ ALU
- ⇒ CU
- ⇒ Registers
- ⇒ Cache
- ⇒ Internal Buses

Q3: What is meant by ALU?

Ans. Arithmetic logic unit (ALU) is the part of the CPU where the actual processing takes place. ALU is capable of performing arithmetic, logical and data manipulation operations on data.

Q4: Which operations are performed by ALU?

Ans. The ALU consists of logic circuitry that performs operations such as addition, subtraction, multiplication, division, exponentials, data manipulations (for example, shifting), comparisons and logical operations such as AND, OR, NOT, etc. on the data contained in the registers.

Q5: What is CU?

Ans. Control unit directs and coordinates the activities of the entire computer system. It controls the working of all the input/output devices, all the primary and secondary storage devices and the calculations performed by the ALU. Control unit controls the operations of computer system based on the instructions in the program by executing them in a proper order.

Q6: What are the main components of CU?

Ans. Control Unit consists of three main components, Instruction Register, Instruction Decoder and Timing & Control Logic.

Q7: What is instruction register?

Ans. Instruction register stores the instruction while it is being executed.

Q8: What is instruction decoder?

Ans. Instruction decoder decodes (translates) it and timing and control logic generates the signals to execute it.

Q9: What are registers?

Ans. Registers are small memory devices whose function is to temporarily store data information and pass it on to the other parts of the processor or main memory during the processing. CPU contains several registers that are used to store various kinds of information needed by the

