

FBQ1: The AND \_\_\_\_\_ is an electronic circuit that provides a high output (1) only if all its inputs are high.

Answer: \*Gate\*

FBQ2: An input/ output \_\_\_\_\_ also called I/O components allows data input and reporting of the results in proper format.

Answer: \*System\*

FBQ3: The binary number 10110 is equivalent to \_\_\_\_\_ in decimal. (numeric answer only)

Answer: \*22\*

FBQ4: The octal number (23)<sub>8</sub> is equivalent to \_\_\_\_\_ in decimal. (numeric answer only)

Answer: \*19\*

FBQ5: The hexadecimal number (E2)<sub>16</sub> is equivalent to \_\_\_\_\_ in decimal system. (numeric answer only)

Answer: \*226\*

FBQ6: The equivalent of the decimal number 14 in binary is

\_\_\_\_\_.

Answer: \*1110\*

FBQ7: With regards to binary numbers, the 2's complement of 1010 is equivalent to \_\_\_\_\_?

Answer: \*0110\*

FBQ8: A von Neumann machine has only a single path between the main \_\_\_\_\_ and the control unit (CU). This feature/constraint is referred to as the von Neumann bottleneck

Answer: \*Memory\*

FBQ9: \_\_\_\_\_ algebra is used for designing and analysing digital circuits.

Answer: \*Boolean\*

FBQ10: [ A.(B.C) = (A.B).C ] and [ A+ (B+C) = (A+B)+C ] are examples of \_\_\_\_\_ law in Boolean algebra

Answer: \*Associative\*

FBQ11: The floating-point number representation consists of two parts. The first part of the number is called the mantissa, and the second part is termed an \_\_\_\_\_.

Answer: \*Exponent\*

FBQ12: Given the logic gate symbol above, if A = 1, and B = 1, what is the output Q? (numeric answer only)

Answer: \*1\*

FBQ13: Given the logic gate symbol above, if A = 0, and B = 0, what is the output Q?

(numeric answer only)

Answer: \*1\*

FBQ14: Given the logic gate symbol above, if A = 1 and B = 0, what is the output Q?

(numeric answer only)

Answer: \*1\*

FBQ15: A \_\_\_\_\_ bit is an extra bit added with binary data such that it makes the total number of 1s in the data either odd or even.

Answer: \*Parity\*

FBQ16: \_\_\_\_\_ is defined loosely as any exceptional event that causes the CPU to temporarily transfer its control from the currently executing program to a different program which provides service to the exceptional event.

Answer: \*Interrupt\*

FBQ17: Typical, Redundant Array of Independent Disks (RAID) implementations have \_\_\_\_\_ levels

Answer: \*6\*

FBQ18: A/An \_\_\_\_\_ set is a collection of all the instructions a CPU can execute.

Answer: \*Instruction\*

FBQ19: When considering instructions sets, \_\_\_\_\_ processing instructions are used for arithmetical and logic operations in a machine.

Answer: \*Data\*

FBQ20: When considering instruction sets, \_\_\_\_\_ instructions are used for testing the status of computation through Processor Status Word (PSW).

Answer: \*Control\*

FBQ21: The term \_\_\_\_\_ scheme refers to the mechanism employed for specifying operands.

Answer: \*Addressing\*

FBQ22: When considering Status and Control \_\_\_\_\_, the sign flag indicates whether the sign of a previous arithmetic operation was positive (0) or negative (1)

Answer: \*Registers\*

FBQ23: \_\_\_\_\_ circuits are interconnected circuits of gates according to a certain rule to produce an output depending on its input value.

Answer: \*Combinational\*

FBQ24: The \_\_\_\_\_ is one of the basic building units of a computer system which connects multiple input lines to a single output line.

Answer: \*Multiplexer\*

FBQ25: \_\_\_\_\_ are used by the control unit for determining the status of the

CPU.

Answer: \*Flags\*

FBQ26: \_\_\_\_\_ circuits are logic circuits whose present output depends on the past inputs.

Answer: \*Sequential\*

FBQ27: The microinstruction cycle typically consists of two basic cycles; the fetch and the \_\_\_\_\_ cycle.

Answer: \*execute \*

FBQ28: The \_\_\_\_\_ unit is responsible for initialising various registers during the start-up of the machine

Answer: \*Control\*

FBQ29: Flip-flops and counters are both examples of \_\_\_\_\_ circuits.

Answer: \*Sequential\*

FBQ30: The information from memory devices can be accessed in the following ways: Random Access; Sequential Access; and \_\_\_\_\_ Access.

Answer: \*Direct\*

FBQ31: When considering the access time on disk, \_\_\_\_\_ time is the time required by a sector to reach below the read/write head.

Answer: \*Latency\*

FBQ32: Instructions are represented as sequence of \_\_\_\_\_.

Answer: \*Bits\*

FBQ33: An instruction \_\_\_\_\_ is used to define the layout of the bits allocated to these elements of instructions.

Answer: \*Format\*

FBQ34: The arithmetic-logic unit (ALU), registers and the control unit are all components of the \_\_\_\_\_.

Answer: \*CPU\*

FBQ35: In Wilkes's™ microprogram control unit, the microinstruction has two major components: the control field, and the \_\_\_\_\_ field

Answer: \*Address\*

Multiple Choice Questions (MCQs):

MCQ1: The following options are all key features of a Von Neumann machine EXCEPT \_\_\_\_\_?

Answer: It uses a stored-program concept.

MCQ2: Which of the following options is NOT a basic function component of the CPU?

Answer: Input Unit

MCQ3: Which of the following options is not an example of a mechanical or electro-mechanical computer?

Answer: The Difference Engine

MCQ4: The following options are all trends encountered during the era of first generation computers EXPECT?

Answer: Centralised control in a single CPU

MCQ5: The second generation computers started with the advent of \_\_\_\_\_?

Answer: Transistors

MCQ6: Which of the following options is NOT an error detection or correction code?

Answer: Parity Bit

MCQ7: The following options are examples of typical CPU registers EXCEPT \_\_\_\_\_?

Answer: Program Counter (PC)

MCQ8: Which of these options is NOT a typical action performed on fetched instructions loaded into an instruction register?

Answer: Data Transfer

MCQ9: Interrupts generated internally by the CPU, on certain exceptional events during instruction execution are called?

Answer: Program interrupts or traps

MCQ10: The following options are all basic logical identities used in Boolean algebra EXCEPT:

Answer: Commutative law

MCQ11: \_\_\_\_\_ gate is an electronic circuit that gives a high output (1) only if all its inputs are high.

Answer: NAND

MCQ12: All the following options are typical logic gate symbols EXCEPT?

Answer:

MCQ13: \_\_\_\_\_ typically represents the logic gate symbol for NAND gates.

Answer:

MCQ14: \_\_\_\_\_ represents the logic gate symbol for NOR.

Answer:

MCQ15: Which of the following options is NOT a method used for the simplification of Boolean expressions (minimisation of gates)?

Answer: Algebraic simplification

MCQ16: Which of these options is NOT an example of sequential circuits?

Answer: Flip-flop

MCQ17: Which of the following options is the term used to refer to the situation when the next micro-instruction which is executed is the one following the current micro-instruction?

Answer: Non-branching

MCQ18: Which of the following options is NOT a scheme for bus arbitration?

Answer: Daisy chaining

MCQ19: When considering the memory hierarchy of the computer system, which of the following options has the fastest access time?

Answer: Registers

MCQ20: The terminology used for identifying the comparative behaviour of the various memory devices and technologies is \_\_\_\_\_

Answer: Cycle time

MCQ21: Information from memory devices can be accessed in all the following ways EXCEPT?

Answer: Random Access

MCQ22: Which of the following options does NOT increase the bandwidth of the processor-memory interface?

Answer: Insert a cache between the main memory and the processor

MCQ23: Which option is NOT a typical function of the Input / Output (I/O) Module?

Answer: Provision of control and timing signals

MCQ24: An input/output module is used for all the following reasons EXCEPT:

Answer: Diversity and variety of I/O devices reduce the flexibility to use new technology if connected directly

MCQ25: The following are operands which can be used in an instruction EXCEPT \_\_\_\_\_

Answer: Address

MCQ26: Which of the following options is NOT a valid classification scheme for register architecture?

Answer: Accumulator Machines

MCQ27: Which of the following options is NOT an input to the control unit?

Answer: Master clock signal

MCQ28: When selecting addressable bits, all EXCEPT \_\_\_\_\_ considered?

Answer: Number of addressing modes

MCQ29: The following options are all examples of \_\_\_\_\_program visible registers\_\_\_\_\_ EXCEPT:

Answer: Data registers

MCQ30: The following options are all examples of the various categories of micro-operations performed by a machine on the data stored in the registers EXCEPT:

Answer: Register transfer micro-operations

MCQ31: Which of the following options is NOT a characteristic representation of a typical 32 bit floating point number?

Answer: The leftmost bit is the sign bit of the number

MCQ32: Which of the following options is NOT a basic responsibility of the control unit?

Answer: data exchange of the CPU with the memory or I/O modules

MCQ33: Which of the following options is NOT a classification of the different types of computer memory?

Answer: Optical memory

MCQ34: The characteristic of "Highly Encoded Microinstructions" include all EXCEPT \_\_\_\_\_

Answer: The encoded bits needed in microinstructions are high

MCQ35: When designing sequencing techniques for micro-instructions, which of the following is not a factor influencing the length of the micro-instruction?

Answer: Means of specifying the address of the next micro-instruction