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C. title : Computer Organization & Assembly language
Batch : 08 (evening)

Ans: to the cs: NO: 1 (a)

Ans: full adder logic gate: Full adder is the adder that adds three input & produces two Outputs. The first two inputs are A and B & the third input is an input carry as c-IN. The output carry is Designated as c-out & the normal Out put is designated as swich is the sum. The C output is also known as they majority 1 detector, whose Output goes high when more then input together to create a byte-wide adder & cascade the carry bit from one adder & cascade the carry bit from one adder to another. We used a full adder because when a carry in bit is available, mother 1-bit adder must be used since a -1 bit half adder does not take carry in bit. A 1 bit full adde three opeaunts & generator bit result.
when the addition of two bainary digits is performed the sum is generated. If it consists of two digit in the Output then the MSB bit is Referred to as carry. This is treated as the third bit in the process of Addition.

a.s.t.

**full Adder truth table:

Input			Output	
A	B	C-IN	sum	C-out
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

Ans to the Q.NO: 1

(b) 1. Distributive law ~~(A+AB) = A~~ (A+AB = A).

$F = (A) + (A'B' + A'B) + ABC$

2. Apply the complement law (A + A' = 1):

$F = (A) + (1 + B') + ABC$

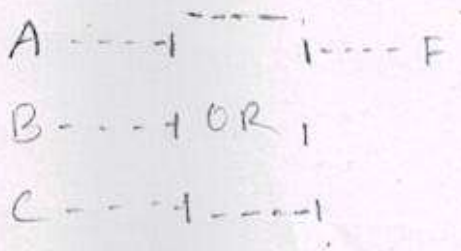
3. Apply the identity law (1 * 1):

$F = (A) + 1 + ABC$

4. Apply the dominance law (x + 1 = 1):

$F = 1 + ABC$

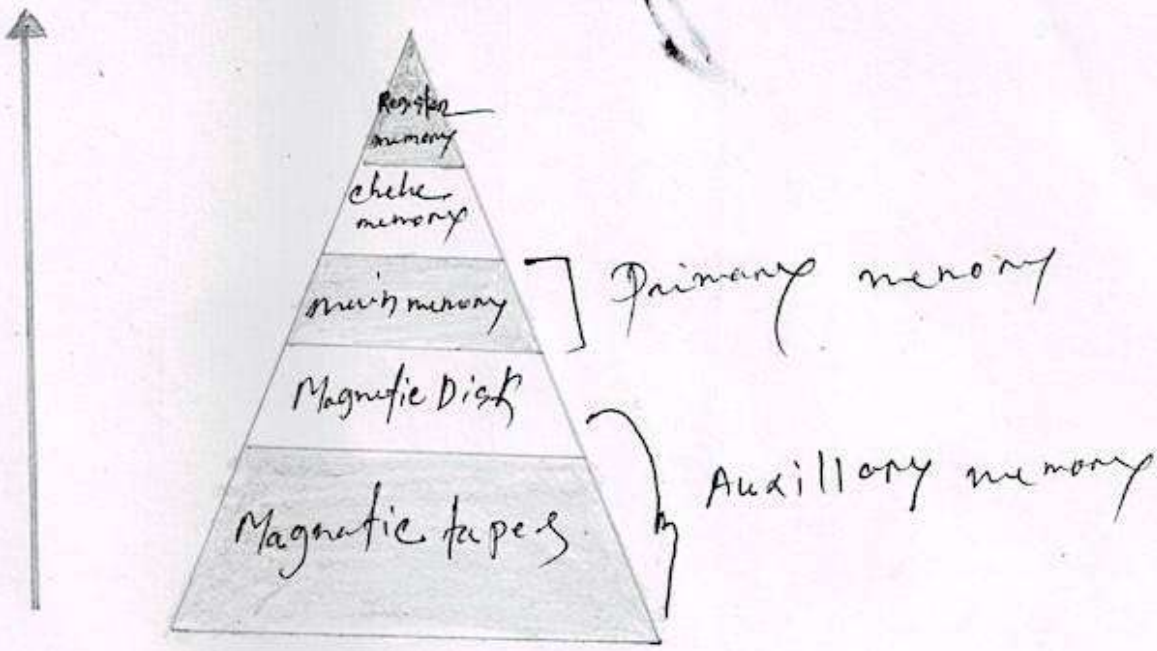
Now lets draw the simplified circuit for F = 1 + ABC. Since F = 1 when any of the inputs A, B, OR C is 1, the circuit can be represented as a simple OR gate with inputs A, B & C:



This OR gate Outputs a 1 whenever any of its inputs (A B or C) is which is the simplified expression for F.

Ans: to the Q: No: 2

(A) Ans: Memory sub-System Organization: The memory is divided into cells & each of them is identified by a unique number called an Address. When the cpu wants to read or write on Address, it generates control signals such as "read" and 'write' which each cell can identify.



Ans: to the Q: NO: 2(b)

Ans: The figure "128 x 8 RAM" represents a specific type of Computer memory module or chip.

Here's what it means:

1. 128: This number typically refers to the capacity of the RAM (Random Access memory) Module. In this case "128" indicates that the RAM Module has a capacity of 128 megabits (Mb) or 16 megabytes MB of storage. Each megabyte.

2. x: The "x" in the figure is often used to separate the capacity from the Organization of the RAM.

3. 8: This number represents the organization or width of the RAM. In 128x8, the 8 means that each memory location in the RAM chip has a width of 8 bits. In other words, it can store 8 bits of data at each address location.

So, "128X8" is a type of RAM module with a capacity of 128 megabits (16 megabytes) & the organization where each addressable location stores 8 bits of data. This type of RAM for temporary data storage & quick access by the CPU.

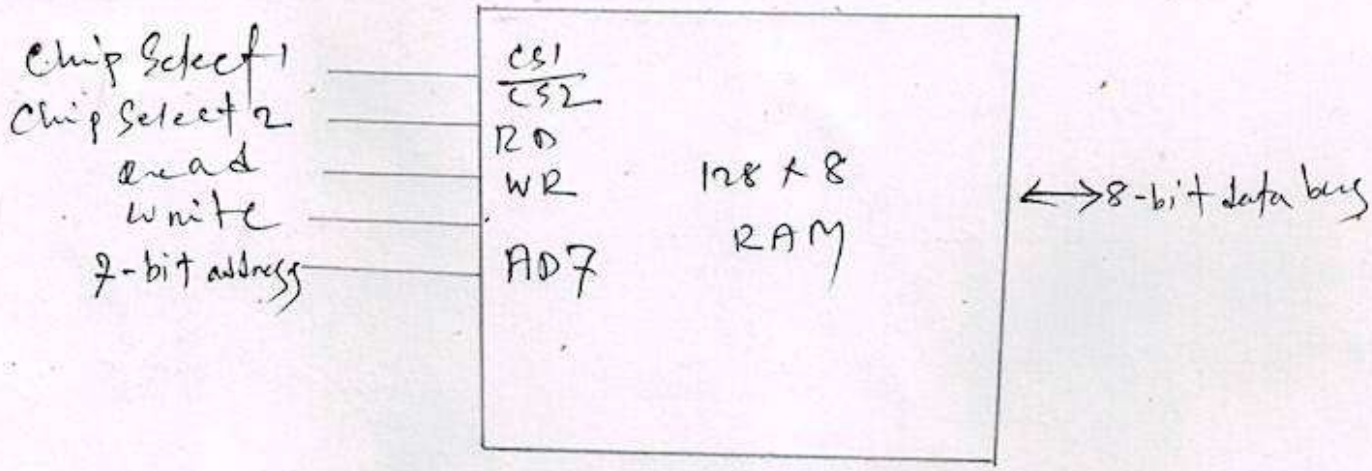


Fig: 128x8 RAM.

Ans: to the Q: No: 03

(a) Ans: A model of I/O Subsystem Organization: -

Input & Output (I/O) Devices Allow us to communicate with the Computer system. I/O is the transfer of Data between primary memory & various I/O peripherals. Input devices such as keyboard mice, Card readers, Scanner voice recognition system & touch screen enable us to enter Data into the computer.

The I/O subsystem of a Computer provide efficient mode of communication between the central system & the outside environment. It handles all the input - output operation of the Computer system.

We can classify input/output ports into four categories based on the CPU's ability to read & write data at a given port address. These four categories based are read only ports write only ports, read/write ports & dual I/O ports.

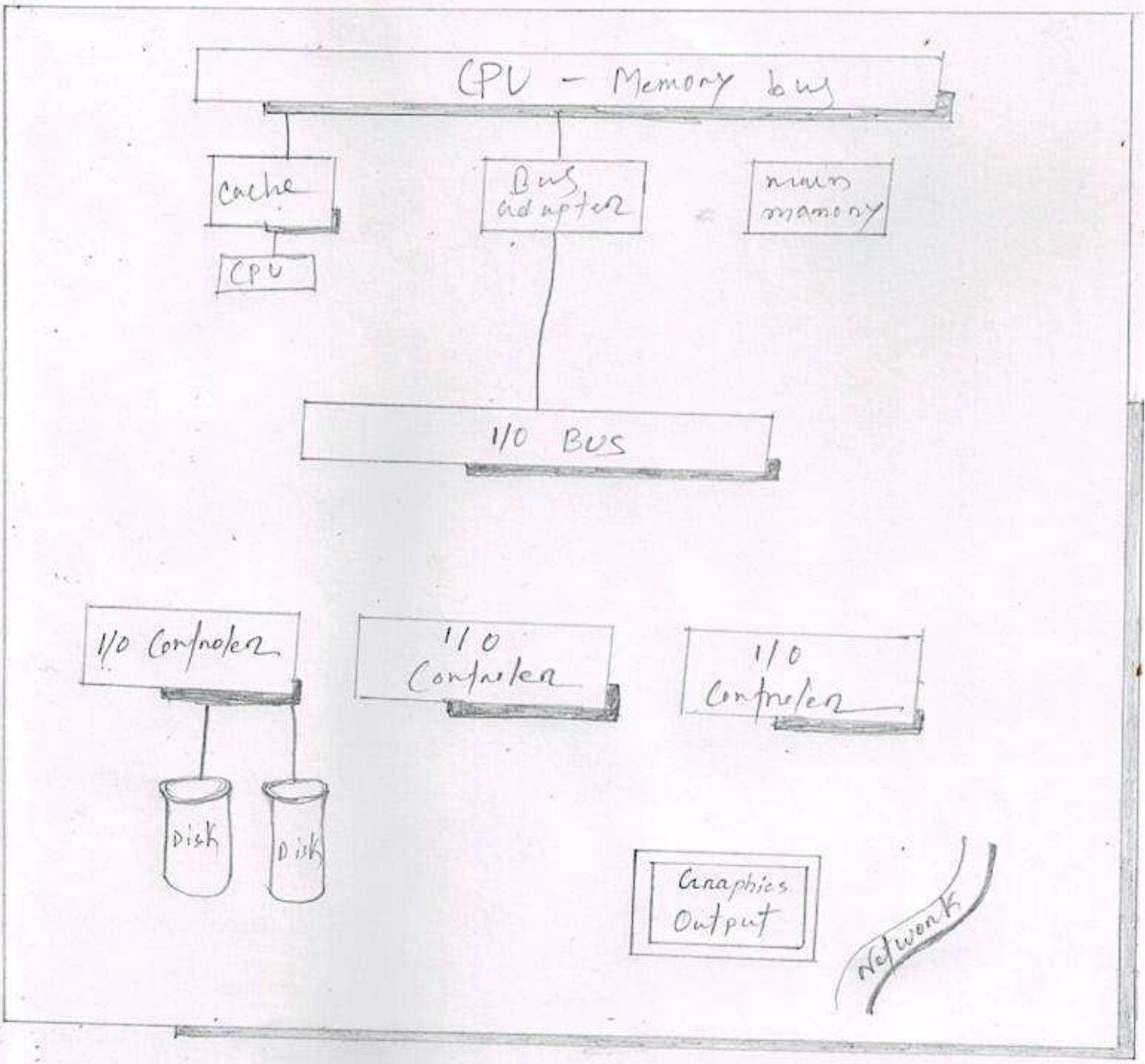


Fig: A mode of I/O subsystem Organization.

Ans: to the Q: NO: 4

(a) Ans: CAM: Content Addressable memory is data storage Divice that stores memory in cell. whe any aspect of the memory is entered the CAM compares the input with all the stored data. It is a high speed searching Application. It is also call associative memory, associative storage or associative array.

Features of CAMS: (1) It is called in the database management system (2) It is also called aggociative memory.

(3) CAM is expensive then ram. (4) CAM is suitable for Parallel- Seerch. (5) It returns the list of Date word address that was cocated.

Working of CAM: (1) Content - Addressable Memory (CAM) is a silicon chip for amazingly quick yet unmistake able kind of memory.

(2) Quering utilizing a CAM is theoretically like cooperative exhibit rationale in data structures yet the yield is very streamlined.

(3) At the point when the key is passed to a cam sub framwork. It restores the related incentive to that key. Because a "key → esteem" pair is made that can be referaced further.

(4) The most significant elements is that query of setion in a CAM can be performed in a solitary clock cycle in the silicon.

(5) A RAM module that requirings various clock cycles to make a solitary memory bringes a cam cell in the chip that comprises two SRAM cells.

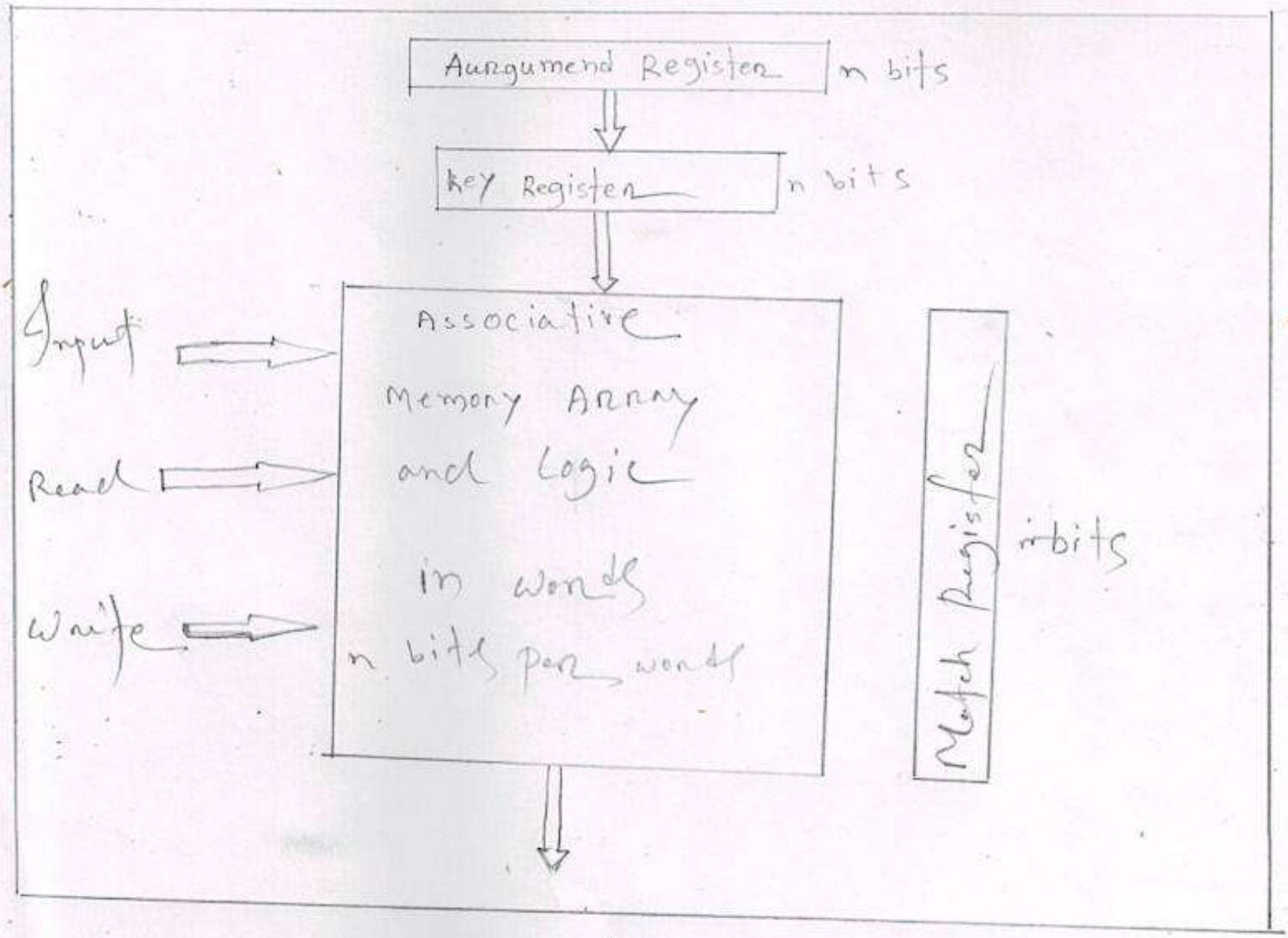


Fig: Content addressable memory.