ARC. Mid Questions

1. In MUL, when the multiplier is 16 bits the multiplicand is …….

   a. AX
   b. BL
   c. EAX
   d. AL

2. Biased representation of exponent is used to simply the comparison of exponents.

   a. True
   b. False

3. In IEEE-754 32-bit floating point hexadecimal value

   “4100-0000” represent decimal value is ……

   a. 8
   b. 2
   c. 1
   d. -1

4. what is the maximum signed positive integer in one byte?

   a. 255
   b. 127
   c. 256
   d. 128

5. INT 21H what is the value of AH that refers to input a character function?

   a. 1
   b. 0a
   c. 9
   d. 2

6. Register that specifies the address in memory is

a. MBR
b. PC
c. IR
d. MAR

7. The spatial aspect of the locality of reference means ….

a. That the recently executed won't be executed again
b. The processor is likely to access data in nearby memory locations of the recently accessed data
c. That the instruction executed will be executed at a later time
d. That the recently executed instruction is executed again next

8. a (4-way) set associative cache memory unit with a capacity of 16KB is built using a block size of 8 words. The Word length is 32 bits. The size of the physical address space is 4GB

The number of bits for the TAG field is?

a. 20 bits
b. 32 bits
c. 5 bits
d. 7 bits

9. In MUL, when the multiplier is 8 bits, the multiplicand is …….

a. AX
b. AL
c. EAX
d. BL

10. INT 21H, what is the value of AH that refers to display a character function?

a. 1
b. 9
c. 2
d. 0a

11. Which flag that refers that the last operation's result is negative?

a. zero
b. sign
c. carry
d. overflow

12. The integer part of the mantissa need to be stored.

a. True
b. False

13. The memory hierarchy, as the speed of the operation increases as the memory size also increases.

a. True
b. False

14. Register that holds result of ALU operations is …….

a. MBR
b. IR
c. MAR
d. AC

15. Architecture indicates its performance while organization indicates its hardware.

a. False
b. True

16. In IEEE-754 32-bit floating-point, hexadecimal value "4000 0000" represent decimal value.

a. 1
b. 2
c. -1
d. 1.5

17. The main purpose of having memory hierarchy is to ……

a. Reduce propagation time
b. Provide large capacity
c. Reduce access time & Provide large capacity
d. Reduce access time

18. In …… endian, the lowest significant byte is stored at the memory location with the lowest address.

a. Medium
b. Short
c. Big
d. Little

19. what is the maximum unsigned integer in one byte?

a. 128
b. 256
c. 255
d. 127

20. Architecture indicates its hardware while organization indicates its performance.

a. True
b. False

21. In …… endian, the lowest significant byte is stored at the memory location with the highest address.

a. Medium
b. Short
c. Big
d. Little

22. During a write operation if the required block is not present in the cache the …. Occurs.

a. Write latency
b. Write delay

c. Write miss
d. Write hit

23. UCS-4 code uses …… bits to represent each character.

a. 8
b. 16
c. 7
d. 32

24. INT 21H, what is the value of AH that refers to output a string function?

a. 0a
b. 1
c. 2
d. 9

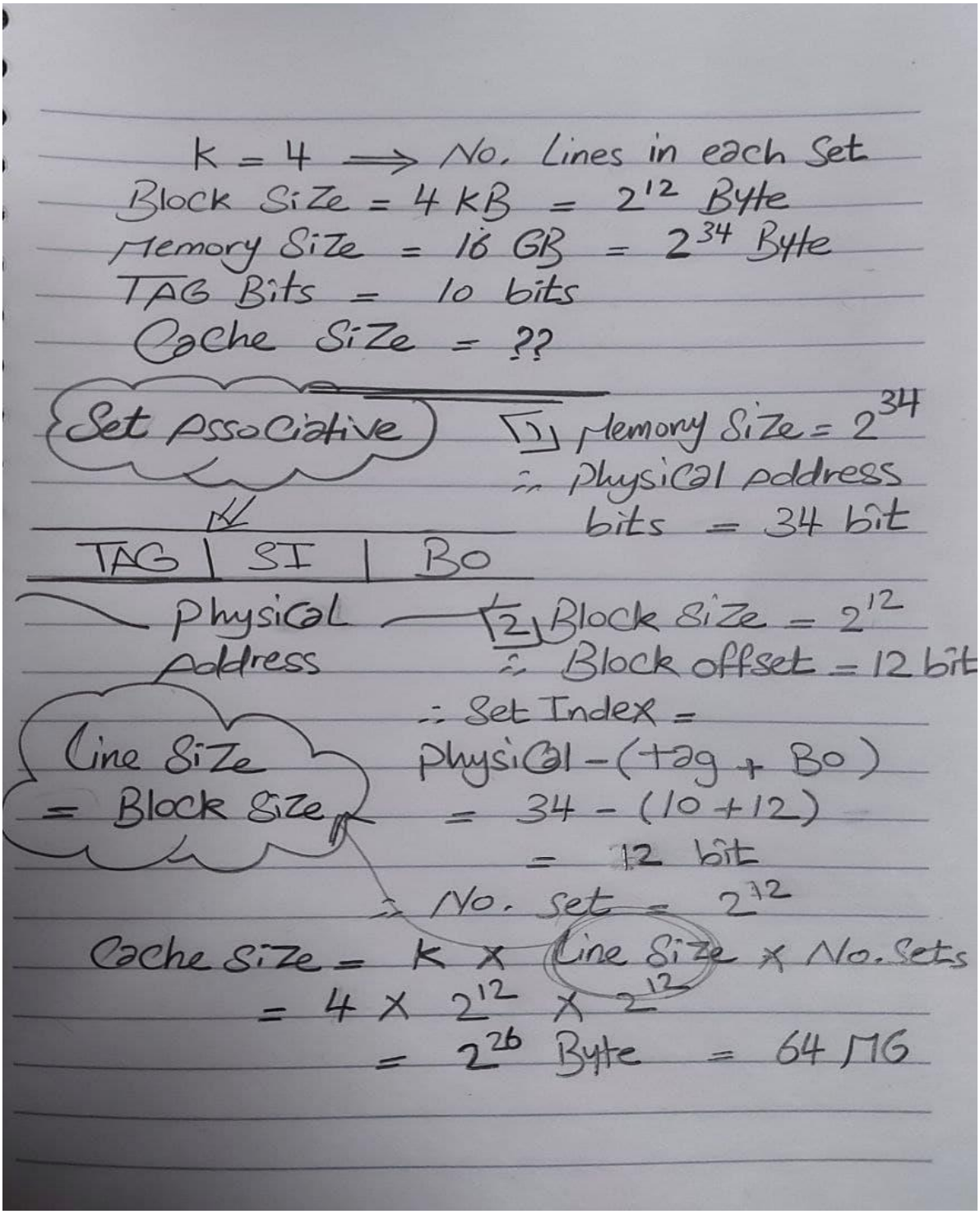
25. Register that contains a word in memory is

a. PC
b. IR
c. MBR
d. MAR

26. In IEEE-754 32-bit floating point hexadecimal value “4200-0000” represent decimal value is ……

a. 8
b. 1
c. 32
d. -1

27.


k = 4 ⟹ No. Lines in each Set
Block Size = 4 kB = 2^12 Byte
Memory Size = 16 GB = 2^34 Byte
TAG Bits = 10 bits
Cache Size = ??
Set Associative
TAG | SI | BO
Physical Address
Line Size = Block Size
[1] Memory Size = 2^34
∴ Physical address bits = 34 bit
[2] Block Size = 2^12
∴ Block offset = 12 bit
∴ Set Index = Physical − (Tag + BO)
= 34 − (10 + 12)
= 12 bit
∴ No. set = 2^12
Cache Size = k × Line Size × No. Sets
= 4 × 2^12 × 2^12
= 2^26 Byte = 64 MB