megaleap
Comprehensive MCA Entrance Coaching

SANMACS INDIA

309 & 313 PRATAP CHAMBERS, GURUDWARA ROAD, KAROL BAGH, DELHI - 110005 PH.: 28757911, 28757630, 32917966

SAI SANMACS PLAZA, PLOT NO. - 6A, COMMUNITY CENTER, DDA, SECTOR - 8, ROHINI, DELHI - 110085 PH.: 32458354, 32522575

e-mail : info@sanmacs.com website: www.sanmacs.com

1. (d) 26 Capital letters +26 small letters + 10 digits +32 other characters.

2. (d) Now 3 address instruction means the operation code followed by 3 address registers. 64 operation codes=2^6 so 6 bits for op. code Now 2 MB = 2^{21}bytes. So no. of bits in MAR should be 21. So max. bits required for a 3 address be 21. So max. bits required for 3 Address instruction are 6 + 21+ 21 + 21 = 69.

3. (c) It uses laser technology.

4. (d) Output in NAND gate is 1 when at least one input is O. so, no. of combinations having at least 1 zero = total combinations -1 combination having all 1's. So, 2^{10} – 1=1023 because total combinations with 10 inputs is 2^{10}

5. (b) Capacity = s * p * t * m
= 256 * 128 * 1000 * 10 = 327.68 MB.
10 Surfaces because 5 plates has 10 surfaces.

6. (c) A1. UV is in 32 base system. Now 32 = 2^5 so we replace each digit by a 5 bit code to get. The binary equivalent of this no. So A1.UV = 0101000001.1111011111. Now to get the Octal no. take the combinations of 3 bits and then replace each combination by the corresponding octal digit 0101000 001.111 101 111 1 =
101000001.111101111100 = (501.7574) in base8.

7. (d) 2MB = 2 * 1000 K = 2 * 2^{10} * 2^{10} bytes.
= 2^{21} bytes. So, 21 bits for MAR.
Each word of 1 byte and 1 byte = 8 bits.
So, 8 bits for MDR.

8. (b) Minimum no. is = 0.10000000000E1111
= $(2^{-1}) * 2^{-(2-1)} = 2^{-1} * 2^{-7} = 2^{-8}$

9. (a) Average access time =avg. latency time+ avg. seek time. Avg. seek time = 10ms. Avg. latency time = Half the time taken by disk rotation.Time for 1 rotation =1/10000 min. = 60/10000s = 6ms.So. Avg. latency time = 6/2 ms = 3 ms. So avg. access time = (10+3) ms = 13ms.

10. (c) On adding the 2 exponent we get 11010110 in the exponent part which indicates over flow for 2 positive exponent.

11. (a) For unsigned integer 1110 = 14 in decimal in signed 2's complement representation. Now the sign bit is 1 so the no. is negative and we again have to take the 2's complement 2's compl.of 1110 is 0010. So the no. is –2.

12. (c)

13. (c) 16 million =2^{24}.Nowany pixelcan have 1out of 2^{24} colors. So, 24 bits will be there for each pixel in the memory .24 bits = 3 bytes.
Now total pixels = 1024 * 1280. So total buffer memory required = 1024*1280* 3bytes = 4MB.

14. (c) Cache memory is a buffer between main memory and the processor.

15. (c)

16. (d)

17. (b) Perl is a procedural scripting language.

18. (d) All the statement are true.

19. (b) It is a tab operator. So prints 1 to 5 in the same line but with fixed gap between them.

20. (d)

21. (b) Multiple intialisation and incrementation expressions are allowed in FOR loop. However only 1 expression is allowed in test expression.

22. (c) We can only have an int. constant or a char constant after case. So float constant will give a Syntax error.

23. (c) Range for integer constants is –32768 to 32767.
Now here i = 35,000 So, 35,000 – 32767 = 2233.
Now 32767 +1 = – 32768
So, 32767 + 2233 = – 32768 + 2232 = -30536.

24. (b) Now 24 address lines means the maximum capacity is 2^{24} .
1 memory chip has capacity 64kb=2^{16} bytes.
So no. of chips = $2^{24}/2^{16}$ =256

25. (c) a = 12.5, b =2.75. Using normalized floating Point representation with 4 bits for mantissa and exponent
a =1100.1 = 0.110E0100
b = 0010.11 = 0.101E0010
Now making the exponent of smaller no. same as that of larger. So b =0.001E0100now on adding the two terms mantissa becomes0.110+ 0.001 = 0.111 and exponent is 0100. So the no. is 0.111E0100 which is 1110 in binary and 14 in decimal.