UNIT-II

(MULTIPLE CHOICE QUESTIONS)

S.NO	QUESTION	BLOOMS LEVEL	CLO
1.	Which method/s of representation of numbers occupies large amount of memory than others ? **a) Sign-magnitude** b) 1′s compliment c) 2′s compliment d) Both a and b		
2.	Which representation is most efficient to perform arithmetic operations on the numbers ? a) Sign-magnitude b) 1′s compliment **c) 2′S compliment** d) None of the above		
3.	Which method of representation has two representations for ’0′ ? a) Sign-magnitude **b) 1′s compliment** c) 2′s compliment d) None of the above		
4.	When we perform subtraction on -7 and 1 the answer in 2′s compliment form is _____ . a) 1010 b) 1110 **c) 0110** d) 1000		
5.	When we perform subtraction on -7 and -5 the answer in 2′s compliment form is _____ . a) 11110 b) 1110 c) 1010 **d) 0010**		
6.	When we subtract -3 from 2, the answer in 2′s compliment form is _____ . a) 0001 b) 1101 **c) 0101** d) 1001		

7.	The processor keeps track of the results of its operations using a flags called _____ . **a) Conditional code flags** b) Test output flags c) Type flags d) Status flags		
8.	The register used to store the flags is called as _____ . a) Flag register **b) Status registers** c) Test register d) Log register		
9.	The Flag 'V' is set to 1 indicates that, **a) The operation is valid** b) The operation is validated c) The operation as resulted in an overflow d) Both a and c		
10.	In some pipelined systems, a different instruction is used to add to numbers which can affect the flags upon execution. That instruction is _____ . a) AddSetCC b) AddCC **c) Add++** d) SumSetCC		
11.	The most efficient method followed by computers to multiply two unsigned numbers is _____ . **a) Booth algorithm** b) Bit pair recording of multipliers c) Restoring algorithm d) Non restoring algorithm		
12.	For the addition of large integers most of the systems make use of _____ . a) Fast adders b) Full adders **c) Carry look-ahead adders** d) Ripple adder		

13.	In a normal n-bit adder , to find out if an overflow as occurred we make use of _____ . **a) And gate** b) Nand gate c) Nor gate d) Xor gate		
14.	In the implementation of a Multiplier circuit in the system we make use of _____ . a) Counter b) Flip flop **c) Shift register** d) Push down stack		
15.	When 1101 is used to divide 100010010 the remainder is _____ . a) 101 **b) 11** c) 0 d) 1		
16.	The logic operations are implemented using _____ circuits. a) Bridge b) Logical c) Combinatorial **d) Gate**		
17.	The carry generation function: ci + 1 = yici + xici + xiyi, is implemented in _____. a) Half adders **b) Full adders** c) Ripple adders d) Fast adders		
18.	The carry in the ripple adders,(which is true) a) Are generated at the beginning only. b) Must travel through the configuration. **c) Is generated at the end of each operation.** d) None of the above		
19.	In full adders the sum circuit is implemented using _____. a) And & or gates **b) NAND gate** c) XOR d) XNOR		

20.	The usual implementation of the carry circuit involves _____. **a) And and or gates** b) XOR c) NAND d) XNOR		
21.	**Problems in Multiplication** The product of 1101 & 1011 is a) 10001111 b) 10101010 **c) 11110000** d) 11001100		
22.	The product of -13 & 11 is a) 1100110011 **b) 1101110001** c) 1010101010 d) 1111111000		
23.	We make use of _____ circuits to implement multiplication. a) Flip flops b) Combinatorial **c) Fast adders** d) Carry look ahead		
24.	The multiplier is stored in _____. a) PC Register b) Shift register **c) Cache** d) IR		
25.	The _____ is used to co-ordinate the operation of the multiplier. **a) Controller** b) Coordinator c) Control sequencer d) Program Counter		
26.	The method used to reduce the maximum number of summands by half is _____. a) Fast multiplication **b) Bit-pair recording** c) Quick multiplication d) Carry Save Summand		

27.	The bits 1 & 1 are recorded as _____ in bit-pair recording. a) -1 **b) 0** c) +1 d) both a and b		
28.	The multiplier -6(11010) is recorded as, a) 0-1-2 b) 0-1+1-10 **c) -2-10** d) None of the above		
29.	The numbers written to the power of 10 in the representation of decimal numbers are called as _____. a) Height factors b) Size factors **c) Scale factors** d) Space Factors		
30.	If the decimal point is placed to the right of the first significant digit, then the number is called as _____. a) Orthogonal **b) Normalized** c) Determinate d) Diagonal		
31.	_____ constitute the representation of the floating number. a) Sign **b) Significant digits** c) Scale factor d) All of the above		
32.	The sign followed by the string of digits is called as _____. a) Significant b) Determinant **c) Mantissa** d) Exponent		
33.	) In Booth's algorithm, for Multiplier=1000 and Multiplicand=1100. How many number of cycles are required to get the correct multiplication result? a. 4 **b. 5** c. 3 d. 6		

34.	In Booth's algorithm, for Multiplier=100 and Multiplicand=1100. How many number of cycles are required to get the correct multiplication result? a. 4 b. 5 **c. 3** d. 6		
35.	In IEEE 32-bit representations, the mantissa of the fraction is said to occupy _____ bits. **a) 24** b) 23 c) 20 d) 16		
36.	The normalized representation of 0.0010110 * 2 ^ 9 is a) 0 10001000 0010110 b) 0 10000101 0110 **c) 0 10101010 1110** d) 0 11110100 11100		
37.	The 32 bit representation of the decimal number is called as ____. **a) Double-precision** b) Single-precision c) Extended format d) None of the above		
38.	In 32 bit representation the scale factor as a range of _____. **a) -128 to 127** b) -256 to 255 c) 0 to 255 d) -16 to 15		
39.	In double precision format the size of the mantissa is _____. a) 32 bit b) 52 bit **c) 64 bit** d) 72 bit		
40.	Which of the following is ordinary (average) multiplier in booth recoding multiplication? a. 01010101 b. 00001111 **c. 11001100** d. None of these		

41.	In booth recoding, M is multiplicand and -1 is booth recoded multiplier, then what will be the result of multiplication? a. 1's complement of M **b. 2's complement of M** c. M d. Right shift of M		
42.	In Booth's algorithm, if Q0=0 and Q-1=0 then it will perform which operation, **a. A=A-M** b. A=A+M c. Arithmetic right shift of A, Q and Q-1 d. A=M-A		
43.	In Booth's algorithm, if Q0=1 and Q-1=1 then it will perform which operation, a. A=A-M **b. A=A+M** c. Arithmetic right shift of A, Q and Q-1 d. A=M-A		
44.	In Booth's algorithm, if Q0=1 and Q-1=0 then it will perform which operation, a. A=A-M b. A=A+M **c. Arithmetic right shift of A, Q and Q-1** d. A=M-A		
45.	In Booth's algorithm, if Q0=0 and Q-1=1 then it will perform which operation, a. A=A-M b. A=A+M c. Arithmetic right shift of A, Q and Q-1 **d. A=M-A**		
46.	What version of multiplicand will be selected if consecutive multiplier bits are 00? **a. 0*M** b. +1*M c. -1*M d. 2*M		
47.	What version of multiplicand will be selected if consecutive multiplier bits are 01? a. 0*M **b. +1*M** c. -1*M d. -2*M		

48.	)What version of multiplicand will be selected if consecutive multiplier bits are 10? a. 0*M b. +1*M c. -1*M **d. 0*M**		
49.	Which of the following is good multiplier in booth recoding multiplication? a. 01010101 **b. 00001111** c. 11001100 d. None of these		
50.	Which of the following is worst case multiplier in booth recoding multiplication? **a. 01010101** b. 00001111 c. 11001100 d. None of these		

PART B
2 Marks with answers

S.NO	QUESTION	BLOOMS LEVEL	CLO
1	1. Differentiate between restoring and non-restoring division		
2	**2** Explain the design of a four bits carry look ahead adder circuit		
3	**3** Add +5 and -9 using 2's compliment method		
4	**4** Given Booth's algorithm to multiply two binary numbers, explain the working of the algorithm with an example.		
5	**5** Explain with figure the design of a 4-bit carry look ahead adder		
6	**6** With figure explain circuit arrangements for binary division.		
7	**7** IEEE standard for floating point numbers, explain.		
8	**8** Design 4 bit carry look ahead logic and explain how it is faster them 4 bit ripple adder		

9	**9** Multiply 14 x - 8 using Booth's algorithm		
10	**10** Explain normalization, excess - exponent and special values with respect to IEEE floating point representation		

PART C
12 Marks (Only Question)

S.NO	QUESTION	BLOOMS LEVEL	CLO
1	**1** Discuss in detail Multiplication of positive numbers with Problem Solving		
2	**2** Explain in detail Signed operand multiplication with Problem solving		
3	**3** Explain in detail about Fast multiplication- Bit pair recoding of Multipliers , Problem Solving		
4	**4** Explain in detail about Carry Save Addition of summands, Problem Solving		
5	**5** Discuss in detail about Integer division – Restoring Division with Solving Problems		
6	**6** Explain in detail Non Restoring Division with Solving Problems		
7	**7** Discuss in detail about Floating point numbers and operations with **Solving Problems**		

8	**8** Explain in detail Addition and subtraction of Signed numbers with Problem solving		
9	**9** Discuss in detail about Design of fast adders, Ripple carry adder and Carry look ahead adder		