Practice Sheet -2

Q.1 Represent the following numbers in IEEE single precision and double precision format.

(a) –78.25

(b) $0.01x2^{-126}$

(c) 1.0

(d) -0.3125

(e) 37.5

(f) -1313.3125

(g) -0.2109375

Q.2 Perform the following register transfer micro-operations required to execute an instruction.

R1	R2	R3
1 0 1 1 0 0 0 1	0 0 0 1 1 0 1 1	0 1 1 1 0 0 1 0

(a) R3←R1+$\overline{R2}$+1

(b) R1←R3-1

(c) R2←R1∨R2

(d) R2←R1⊕R3

(e) R1←cil R1

(f) R2←shr R2

(g) R3←ashr R3

Q.3 Perform the following binary multiplications using Booth's algorithm.

(a) -11×(-4) (b) (21)×(-2) (c) (-60)×2 (d) 6×9

Q.4 Write the reverse polish notation of the following infix notations.

(a) $\frac{A-(B*(C/D))}{(E*F)+(G*H)}$

(b) $\frac{P+Q-A+S}{\frac{C}{B}+\frac{D}{E}+Q*R}$

(c) $\frac{A}{B}+\frac{C}{D}+\frac{Q-R+H}{A*B}$

Q.5 Evaluate the arithmetic expressions given in Q.4 using stack organization. Given A=121, B=3, C=108, D=9, E=2, F=5, G=9, H=6, P=300, Q=10, S=5, R=2