

1. a. Draw the flowchart for calculating the sum of $1+3+5+\dots+N$. (10%)
b. Write down a C program to calculate the sum of $1+3+5+\dots+N$. (10%)
2. Write a C program which can read a series of numbers from the user and place them in an ordered array. (20%)
3. Write down a C program to multiply two matrices. (10%)
4. Write down a C program to calculate $n!$ by recursive technique. (10%)
5. For HTMP (Hyper Text Markup Language) tags, please explain how to use following tags (1) (2) <A> (3) <table>. (10%)
6. Using 2-input AND, OR and NOT gates, design a circuit to implement the following truth table. (10%)

x	y	Output
0	0	1
0	1	1
1	0	0
1	1	1

7. a. What are the two parts of a machine instruction? (4%)
b. What are the control steps for a machine cycle? (8%)
c. Explain how a machine's throughput can be improved with pipelining technique. (8%)