Stack Applications

1. Imagine we have two empty stacks of integers, s1 and s2. Print the status of Stack at the end (Practice Question)

```
pushStack(s1, 3);
pushStack(s1, 5);
pushStack(s1, 7);
pushStack(s1, 9);
pushStack(s1, 11);
pushStack(s1, 13);
loop not emptyStack(s1)
        popStack(s1, x)
        pushStack(s2, x)
end loop
```

Simple Stack Applications *(Any two – 5 Marks)*

1. Copy Stack – copy stack S1 contents into another stack S2 without changing the order

2. Merge stack S1 and stack S2 into another stack S3

3. Split Stack S into stacks S1 and S2 such that S1 contains only positive numbers and S2 contains only negative numbers

4. Write a program to implement the Algorithm "reverse the number series". Test your program with the number series 1, 3, 5, 7, 9, 2, 4, 6, 8

5. Write a program that converts a decimal number into octal number

6. Write a program that converts a decimal number into hexa-decimal number

Expression Evaluation *(any one 5 Marks)*

1. Balancing Parenthesis

i. ((a+ b) * c)
ii. (a * b) * c)
iii. A * (B + C))
iv. Reading a C /CPP / Java source file and check its for { } matching

2. Evaluate expression when A =1, B=2, C=3, D=4, E=5, F=6, G=7, Z=7

i. D + B - C
ii. (A * B) + (C * D)
iii. A B * C * D F * - G +
iv. A Z B C + * - D E * - F /