Std :9

Marks : 80

Section A

Time :2 hrs

1) What do you understand by Abstraction ? Explain with example . [2]
2) Give the prototype of a function **search** which receives a sentence **sentc** [2]
   and a word **wrd** and return 1 or 0 .
3) Distinguish between call by value and call by reference ? [2]
4) Name any two java packages ? [2]
5) Distinguish between pure and impure function ? [2]
6) State the method that converts a string to a primitive int data type . [1]
7) What is the role of keyword void in declaring function ? [1]
8) Write any two advantages of using functions in a program ? [2]
9) What is function overloading ? Which OOP'S principle is implemented in
   function overloading ? [3]
10) Distinguish between actual parameter and formal parameter ? [2]
11) Write any one similarity and one difference between do ..while and while loop [2]
12) What is the function of return statement ? [1]
13) What is an instance variable ? [1]
14) How to create an object **obj** of class **myclass** [1]
15) Write the output :-

    class output [2]

```
{
void main()
{
pass(20,30);
}
void pass( int a, int b)
{
a=a+b;
b=a-b;
a=a-b;
System.out.println(a+"   "+b);
}}
```

16)
```
int x=95;
do
{
System.out.println(x++);
if( (x%10 ==0)
break;
} while (true);
```
Study the above program segment and answer the following :-

a) Re-write the do..while loop using for loop [2]

b) Write the output and how many times the loop will execute. [2]
    (show the working)

Section B [50 marks]

1) Write a program to check whether a number is trimorphic number or not .

A trimorphic number is a number whose cube ends in the number itself.

For example, $4^3 = 6\underline{4}$, $24^3 = 13\underline{824}$, and $249^3 = 15438\underline{249}$.

2) A number is said to be palindrome , if its reverse form is same as the number. Write a program to input two numbers and print all palindrome numbers between (both inclusive) these numbers.
Use the function boolean palindrome(int) – to check whether a number is palindrome or not .

3) Write a program to sum the series

$$S = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} \ldots \ldots \ldots \ldots \ldots \ldots \frac{x^{10}}{10!}$$

Use the function **fact()** – to find the factorial of a number .

4) Write a menu driven program using switch statement , to perform the following:-

1) To check and display whether a number input by the user is a composite number or not.
(A number is said to be composite , if it has one or more than one factor excluding 1 and the number itself) . eg 4 ,6,8,9 ect

2) To check whether a number is a harshed number or not.
    Harshed number is a number that is divisible by sum of its digits.
    Eg 18 is a harshed number
    18= 1+8= 9 . and 18 is divisible by 9

For an incorrect choice , an appropriate error message should be displayed.

5) Write a program to print Fibonacci numbers (0,1,1,2,3,5 ……...) upto 100 using the function void fibno()