Q8 Define a class as follows:-
class Name - Account
Data Members - account number, name, balance, type of account (char)
Functions - 1. default constructor 2. input() 3. deposit(int)
4. int withdraw() - after checking for minimum balance as Rs. 1000.
5. display() 6. main() - creates an object and calls the functions.

PAPER 6

Q1 a) Diff. between & and &&. b) What is the result of Sopln('A'+'A');
c) Write the function of the keyword 'new'. d) What is the advantage of function overloading? e) Evaluate: for(int i=10; i>0; i-=3) Sopln(i--);

Q2 a) Fill in the blanks so that the program prints the integer codes of a character:

```
class FILL
{ ____ convert(char c)
  { ____ d = c;
    Sopln(d);
  }
public static void ABC()
{ ____ obj = ____ FILL();
  char d = 'A';
  ____ ;
}}
```

b) What is white space?
c) What is the diff. between a Java application and a Java applet?
d) What is recursion?
e) Evaluate:-
Sopln(5+"5"+5+5);

Q3 a) Explain i) System.exit(0); ii) null
b) Diff between toUpperCase() and Character.toUpperCase().
c) Diff. between Bubble and Selection Sort.
d) Find the error:
int a = 2+2.2;
e) What is garbage collection?

Q4 a) Diff. between identifiers and keywords. b) What is the importance of access specifiers in a function? c) What are the parameters used for?
d) What are shortcut assignment operators? e) Give the output:-

```
short a = 1;
do
{ a *= 5;
  Sopln(a);
} while (!(a>100));
```

Section B

Q5 Write a menu-driven program using overloaded functions to convert C to F or vice versa depending on user's choice:

$C = \frac{5}{9}(F-32)$ $F = \frac{9}{5}(C+32)$

Q6. WAP to input a string and remove extra spaces from it.
Q7. There are 50 students in a class. They have been given marks in the range of 0 to 100. Find and print the mode i.e most frequently occurring mark.
Q8. WAP, using switch-case, to 1) input an integer and check whether it is a Unique Number or not. i.e no digit should repeat in it.
2) inputs 2 integers and print their LCM.

PAPER 7

Q1. a) Diff. between POP and OOP. b) How many types of integer constants are there? c) Give the output:-

```
int a=0,b=0,c=0,d=0,e=0;
while (e<=5)
{ switch(e++)
  { case 1:
    case 2: ++a;
    case 3:
    case 4: ++b;
    case 5: ++c;
    default: ++d;
  }
Sopln("a="+a+"\t"+"b="+b+"\t"+"c="+c+"\t"+
"d="+d+"\t"+"e="+e);
```

b) Give two diff. between "this" and this.
c) Explain the role of suffix while calling overloaded functions.
d) Name any 2 stream classes of Java. e) String s="Ujjwal is a good boy";
int p=s.lastIndexOf('j');
int q=s.indexOf(66);
Sopln(p+q);

Q2 a) Give the output: int[] arr={2,4,6,8,10};
int x=1; arr[x++]= ++arr[x++] + arr[x++]++;
for(int i=0; i<5; ++i) Sopln(arr[i]);

Q3 a) Give the output: String s="CONGRATULATIONS";

```
int i,j,x;
for(i=2; i<s.length(); ++i)
{ x=0;
  for(j=1; j<i; ++j)
  { if(i%j==0)
      x++;
  }
  if(x==1)
    Sopln(s.charAt(i));
}
```

c) Show steps of selection sort in ascending order: 19, 7, 32, 65, 89, 42, 2, 24

b) Explain two diff. between "this" and this.
c) Explain the role of suffix while calling overloaded functions.
d) Name any 2 stream classes of Java. e) String s="Ujjwal is a good boy";
int p=s.lastIndexOf('j');
int q=s.indexOf(66);
Sopln(p+q);

Q7 a) Sopln(2+'2'+2+"2.2"+2.2);
b) Name any 2 modifiers of a function.
c) Sopln((char)97+(char)122);
d) When do we import a package?
e) Give an example to show Constructor Overloading

Q4. a) What are the default values of byte, long, float, double, char, boolean, String?

Paper 4 (Section A)

Q1 a) Write any 5 important features of Java. b) What is Unicode?
c) Write in Java - i) e^{2x} ii) $\sqrt[3]{x^4}$ iii) $|a| + x^{0.5}$ d) Diff. between indexOf() and lastIndexOf(). e) Diff. between read() and readLine().

Q2 a) Explain the term Java API package. b) What are compound conditions?
c) What is an empty statement? Give its use. d) Name 3 composite data types. Justify how class is a data type. e) Explain: String.valueOf()

Q3. a) Diff. between next() and nextLine(). b) What is garbage collection.
c) Give the syntax of arraycopy. d) What is labelled break? e) What happens when break is not present in a switch?

Q4 a) Evaluate: 2 * 20/5 * 2/1 - 2.0 + 1.0 b) What is attribute? Give eg
c) Name the developers of Java. d) What is a class variable? How is it different from an instance variable? e) Explain: global and local variable.

SECTION B

Q5 Define a class as follows:
class name - convert
data members - dd, mm, yy
Methods: 1. parameterized constructor 2. calculate() - converts the date as follows: if input is dd = 10, mm = 7, yy = 2013, Output: 10th July 2013
Output: TWO NINE THREE

Q6 WAP to input a number and display it in words. eg Input is 293

Q7. A magic number is a number in which the eventual sum of digits of the number is equal to 1. eg 172 = 1+7+2 = 10, 10 = 1+0 = 1. WAP.

Q8. WAP which accepts a sentence and interchange the first alphabet with the last alphabet for each word in the sentence, with single letter word remaining unchanged. eg Input is: It is a warm day Output: tI si a marw yad.

PAPER 5

Q1 a) Write the following real constants in exponent form: 23.197, 7.124, 0.00055, 0.319 b) Write in fractional form: 0.13E04, 0.417E-04
c) What do you mean by type casting? What is type cast operator? d) Which of the following is not a keyword: class, void, true, public e) What is the principle reason for passing arguments by call by value?

Q2 a) Which is invalid integer: 1934 0123 0XFACE 0193A b) Differentiate between a compiler and interpreter. c) How does a class forms the basis of all computation? d) What are temporary instances of a class?
e) Evaluate: int a = 1, b = 1; a += ++a + a + (++a); b -= a - (b--) - (--b);

Q3 a) How can objects be initialized with desired values at the time of object creation? b) Which keyword can protect a class in a package from accessibility by the classes outside the package? (private, protected, final, don't use any keyword at all). c) Write a statement to allow a program to use a class "Teacher", stored in a package "school". d) Diff. between scope and visibility. e) What is the significance of a null statement? f) Write the general format of ternary operator. Give an example.

Q4 a) int x = 'a' - 32; Sop ln(x + 'A'); b) int a = 5, b = 8; int c = a % 2 * b / 2 * 2;
Sop ln("The result is:" + (a + b) + c);
c) String x = "Happy New Year"; Sop ln(x.lastIndexOf(32)); Sop ln(x.substring(2,3) + x.substring(10));
Sop ln(Math.abs(Math.pow(-3,3)));

SECTION B

Q5 An election is contested by 5 candidates. The candidates are numbered 1 to 5. The voting is done by marking the candidate number on the ballot paper. WAP to read the ballots and count the votes cast for each candidate using an array. In case, the number read is outside the range 1 to 5, the ballot is considered as a "spoilt ballot" and the program should also count the number of spoilt ballots. At the end, announce the winner.

Q6 A cloth showroom has announced the following seasonal discounts:-
WAP using switch-case to compute the net amount to be paid by a customer.

Purchase amount	Discount	
	Rail cloth	Handloom cloth
0 - 100	-	5.0 %
101 - 200	5.0 %	7.5 %
201 - 300	7.5 %	10.0 %
More 300	10.0 %	15.0 %

Q7 WAP to input 5 strings (titles of books) and count how many books contain the word "Java" in it.