



This question paper is divided into two sections.

You are to answer all questions in **Section A** and any two **questions** from **Section B**.

All working, including rough work, should be done on the same sheet as the rest of the answer.

SECTION A (40 marks)
Attempt ALL questions.

1.

A. What is the type and value of the following expression? (Notice the integer division) –

$$4 + 1/2 + 2*-3 + 5.0$$

- (a) int -5
- (b) double -4.5
- (c) int -4
- (d) double -5.0

B. How many times 'Hello' is printed?

```
Public static void main(String args[])
```

```
{  
for(i = 0;i<5;i++)  
{  
    System.out.println("hello");  
    break;  
}  
}
```

Options

- (a) 5
- (b) 4
- (c) 1
- (d) 0

C. Which of the following statements is true?

- a) Character.isLowerCase() and Character.toLowerCase() are same.
- b) Character.isLetter() and Character.isAlphabet() are same.
- c) parse and valueOf functions are same.
- d) Character.isDigit() and Character.isNumber() are same.

D. State the value of n and ch.

```
char c='A';
```

```
int n= c+1;
```

```
char ch=(char)n;
```

a) n=66 ch=b

b) n=92 ch=a

c) n=97 c=b

d) n=66 ch=B

E. Which of these is a process of converting a simple data type into a class ?

(a) type casting

(b) type conversion

(c) type wrapping

(d) None of the mentioned

F. Analyze the given code and determine how many times does the inner loop execute?

```
for (int i=3; i<=4; i++)
```

```
{
```

```
for (int j=2; j< i; j++)
```

```
{
```

```
System.out.println(" ");
```

```
}
```

```
}
```

a) 2 times

b) 3 times

c) infinite

d) 4 times

G. Which of the following classes is not included in java.lang?

a) Class

b) Integer

c) Byte

(d) () Array

H. What will be the output of the following program?

```
class Output{  
public static void main (String args  
Integer i = new Integer(150);  
double x = i.doubleValue);  
System.out.print(x);  
Integer is a ...
```

- (a) adapter class
- (b) inner class
- (c) not a class
- (d) wrapper class

I. What will be the output of the following program?

```
public class Test {  
public static void main(String args[ ] )  
int n = 111;  
char ch = Character.toUpperCase(char)n);  
System.out.println(ch + " My God!");  
}  
}
```

- (a) Runtime error (b) Mt God! 111
- (c) 111 My God! (d) O My God!

J. What will be the output of the following program?

```
public class NestedFor  
{  
    static void main()  
    {  
        for (int i= 0; i < 10; i *= 3)  
        {  
            System.out.print(i + “.”);  
            for (i = 6; i < 14; i += 2)  
            {  
                System.out.print(i + “.”);
```

```

        }
    }
}

```

- a. 0:6:8:10:12:
- b. 6:8:10:12:
- c. 6:9:12:
- d. Some other output or Compilation Error

Question 2.

- (a) Define Encapsulation. [2]
- (b) What are keywords ? Give an example. [2]
- (c) Name any two library packages. [2]
- (d) If `int x [] = { 4, 3, 7, 8, 9, 10 }`; what are the values of p and q ? [2]
 - (i) `p = x.length`
 - (ii) `q = x[2] + x[5] * x[1]`
- (e) Give the output of the following program segment and also mention how many times the loop is executed : [2]

```
int i;
```

```
for (i = 5; i > 10; i ++)
```

```
System.out.println(i);
```

```
System.out.println(i*4);
```

SECTION B (60 Marks)

Attempt **any four** questions from this Section.

The answers in this Section should consist of the **Programs in either Blue J environment or any program environment with Java as the base.**

Each program should be written using **Variable descriptions/Mnemonic Codes** so that the logic of the program is clearly depicted.

Flow-Charts and Algorithms **are not required.**

Question 4. [15]

Using the switch statement, write a menu driven program to:

- (i) Generate and display the first 10 terms of the Fibonacci series 0, 1, 1, 2, 3, 5.....
The first two Fibonacci numbers are 0 and 1, and each subsequent number is the sum of the previous two.

- (ii) Find the sum of the digits of an integer that is input.

Sample Input: 15390

Sample Output: Sum of the digits = 18

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

Question 5. [15]

Using the switch statement, write a menu driven program for the following:

- (i) To print the Floyd's triangle [Given below]

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

(ii) To display the following pattern:

I
I C
I C S
I C S E

For an incorrect option, an appropriate error message should be displayed

Question 6.

[15]

Write a program to input integer elements into an array of size 20 and perform the following operations:

- (i) Display largest number from the array.
- (ii) Display smallest number from the array.
- (iii) Display sum of all the elements of the array.
