St. Joseph's Academy

MODEL PAPER – 2. Dec 22

Section A

Ques 1 Choose the correct answer :- [20]

i) By forming a super class and a sub-class, we achieve :
a) Abstraction
b) Encapsulation
c) Inheritance
d) Polymorphism.

ii) Which of the following have same memory :
a) boolean and char
b) char and int
c) int and float
d) float and double

iii) Find the odd one out :
a) >
b) ++
c) *
d) %

iv) Which of the following is Boxing :-
a) int to char
b) char to String
c) String to int
d) int to String

v) Math.ceil(-2.5) will return
a) 3.0
b) -3.0
c) -2.0
d) 2.0

Signature

vi) Which is the correct ternary :-

a) `x = x%2==0 ? x+1 : x-1;`

b) `x%2==0 ? x=x+1 : x=x-1;`

c) `x%2==0 ? ++x : --x;`

d) `x%2==0 ? x+1 : x-1;`

vii) ATM machine can be controlled by

a) for

b) while

c) do-while

d) if-else

viii) Memory of char is

a) 8 bits

b) 16 bits

c) 24 bits

d) 32 bits

ix)
```
for(i=10; i>0; i-=3)
    Sopln(i+",");
```

a) 10, 7, 4, 1, -2,

b) 7, 4, 1, -2,

c) 10, 6, 2,

d) 10, 7, 4, 1,

x)
```
char a = (char)99;
do
  {
   Sopln(--a);
  } while(--a > 97);
```

a) c
b
a

b) c

c) b
a

d) b

Signature

xi) A constructor is called
a) at the time of declaring static variables
b) at the time of executing main().
c) at the time of object creation
d) at the time of declaring instance variables

xii) Sop(ln(Integer.parseInt("65") + Integer.toString(25)); will result in
a) "A" + 25
b) A25
c) 6525
d) 90

xiii) Find the wrong statement:
a) a class can exist without an object
b) a class can exist without a main().
c) a class can exist without instance variables
d) a class can exist without instance variables and member methods.

xiv) Which of the following does not exist in Java
a) indexOf(char)
b) indexOf(String)
c) lastIndexOf(char)
d) lastIndexOf(String)

(xv) The output of (char)49 + (int)'Z' would be
a) 139
b) 02
c) 090
d) 92

xvi) Explicit conversion is not possible of:
a) int to String
b) int to byte
c) int to double
d) int to char

vii) The output of "Happy".substring(5) would be
a) no output
b) \0
c) error
d) y

viii) An array char[]A = new char[0] will occupy:
a) 0 bytes
b) 1 byte
c) 2 bytes
d) 4 bytes

xix) System.out.println("A".length); will give
a) 0
b) 1
c) 2
d) error

xx) Name the type of error that may occur: Sqrt(Math.sqrt(x));
a) Syntax error
b) Logical error
c) Run Time error
d) No error

System.out.println(Math.sqrt(x));

BE

Signature

Ques 2 (2 marks each)

i) Evaluate

!(38%5/2*2 != 2-2+5-1+4)

ii) Write a java expression for:

$\sqrt{|x|} + \sqrt[4]{1/y}$

iii) Rewrite, using switch case:

```
if (grade >= 1 && grade <= 4)
        salary += 10000;
else
        salary += 1000;
```

iv) Define a user-defined function named bigger that accepts two characters as parameters and returns the unicode of bigger character.

v) Give the output:

```
int i = 3;
if (i++ == 3 || ++i == 6)
        System.out.println (i);
else
        System.out.println (i+2);
```

vi) Give the output:

```
int [] arr = {2, 4, 6, 8, 10};
int i = 3;
arr [i-1] = --arr [i--];
for (int j = 0; j < 5; ++j)
        System.out.println (arr [j]);
```

BE

Signature

vii) Give the output:
"makemytrip".substring(0,2)+"payTM".lastIndexOf('T')

viii) Tell, whether the following is a pure or impure function:

```
public double calcu(Number R1)
  {
    double x = R1.num * 2;
    return x;
  }
```

ix) Write a parameterized constructor for the following class:-

```
class Tio
  {
    String model;
    float price;
```

x) Consider the following class and answer the questions that follow:

```
class ABC
  {
    int a = 10;
    static int b = 20;
    public void tricky(int a)
      {
        b = a;
      }
    public void show()
      { System.out.println(a+b);
      }
```


Signature

a) Name the local variables.
b) Give the output.

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Section B

Attempt any FOUR questions.

(Variable Description table required for every program. Comments are optional.)

Ques 3. Define a class as follows :-

class name – Indigo

data members – From – string type
Destination – string type
Current_Date – a string of 8 characters "05/01/23"
days_ahead – of int type
Fare – of double type

member methods

1. Indigo() – a default constructor
2. input() – to accept From, Destination, Current_Date, days_ahead from the keyboard.
3. calc_fare() – to calculate the fare as per following table :

Date	Fare
Present date or two days ahead	Rs. 5000/-
Ahead of 2 days till 7 days ahead	Rs. 4500/-
Ahead of 7 days	Rs. 4000/-

4. display() – to print all the details.

Write a suitable main in which create an object and call the functions.

DE

Signature

Ques 4) Define the following overloaded functions:

1. void over (char x) - to display a pattern as follows, till x:
   eg. if x is J
   A
   BC
   DEF
   GHIJ

2. void over (int x, int y) - to find & display the HCF of x and y.

Write a suitable main.

Ques 5) WAP to input a string comprising only of characters in UPPERCASE. Copy all the characters into a char type array A[]. Sort the array, using Bubble Sort. Display the sorted array.

Ques 6) WAP to input a word. Shuffle the string to put all capital letters followed by small letters followed by digits followed by special characters.

eg input is: "25@Leonard's"
output: Leonards25@'