PAWAR PUBLIC SCHOOL, HADAPSAR, PUNE
COMPREHENSIVE CONTENT REVIEW- I (2021-2022)
SUBJECT – COMPUTER APPLICATIONS

Std.: X **Max. Marks: 50**
Date: 08/10/2021 **Duration: 1 h**

ALL QUESTIONS ARE COMPULSORY.

The marks intended for questions are given in brackets [ ].

Select the correct option for each of the following questions.

SECTION A (30 Marks)

Question 1

Choose the correct option for the following: **[5 × 1]**

(a) Which of the following statement is not valid for object-oriented programming language?

(i) Data values are secured.

(ii) No reusability concepts

(iii) Error detection and correction become easier

(iv) Easier in coding complex programs

(b) Which of the following is an example of dynamic initialization?

(i) double a= Math.pow(2,3); (ii) int a =10; (iii) double a = 65.5; (iv) None of these

(c) In this type of conversion, the data type of the result gets converted into a specific type as per user's choice.

(i) Implicit type conversion **(ii) Explicit type conversion**

(iii) both (i) and (ii) (iv) None of these

(d) A function is invoked through an:

(i) parameters (ii) class **(iii) object** (iv) return

(e) Which of the following is used to terminate the program?

(i) break (ii) return (iii) continue **(iv) System.exit(0)**

Question 2

Fill in the blanks with correct option: **[5 × 1]**

(a) _____ is the technique of binding both data and methods together to keep them safe from unauthorised access and misuse.

(i) Abstraction (ii) Inheritance **(iii) Encapsulation** (iv) Polymorphism

(b) An IF or ELSE IF statement accepts ___ as input before branching.

(i) boolean (ii) int (iii) float (iv) char

(c) A code to read a double data type data from the keyboard using scanner class.

Scanner sc = new Scanner(System.in);

double d =_____;

(i) sc.nextdouble() (ii) nextdouble() (iii) nextDouble() **(iv) sc.nextDouble()**

(d) The access specifier that gives the least accessibility is _____

(i) Public **(ii) Private** (iii) Protected (iv) both (ii) and (iii)

(e) The parameters which are declared in function definition are called _____

(i) Actual parameters **(ii) Formal parameters** (iii) Original parameters

(iv) Duplicate parameters

Question 3

Name the following: **[5 × 1]**

(a) It is an intermediate code created after compilation of Java source code.

(i) class code **(ii) byte code** (iii) machine code (iv) JVM code

(b) It does not return any value.

(i) break (ii) continue **(iii) void** (iv) return

(c) The keyword used to access members of another package.

(i) import (ii) static (iii) class (iv) switch

(d) The keyword that distinguishes between instance variable and class variable.

(i) this (ii) void (iii) public **(iv) static**

(e) It is used when number of iterations are known.

(i) while() **(ii) for()** (iii) both (i) and (ii) (iv) None of these

Question 4

State whether the following statements are true or false: **[5 × 1]**

(a) The default statement is optional in switch..case.

(i) True (ii) False

(b) According to hierarchy of data types, char is higher data type than short.

(i) True **(ii) False**

(c) Impure function does not change the state of an object.

(i) True **(ii) False**

(d) Constructor is overloaded automatically.

(i) True (ii) False

(e) Logical errors cannot be detected by the compiler.

(i) True (ii) False

Question 5

Choose the odd one for the following: **[5 × 1]**

(a) (i) void (ii) int **(iii) Class** (iv) switch

(b) (i) ; **(ii) =** (iii) ( ) (iv) { }

(c) (i) for(int i=1; i>=1; i++){ }

(ii) for(int j=5; j>=1; j--);

(iii) for(; ;) { }

(iv) while(true) { }

(d) (i) "EXAM" (ii) '5' (iii) null **(iv) False**

(e) (i) Math.sqrt() (ii) Math.cbrt() **(iii) Math.round()** (iv) Math.random()

Question 6

Give the output of the following: **[5 × 1]**

(a) double x=2.4,y=2.5;

System.out.println(Math.min(Math.ceil(x),y);

(i) 2.0 (ii) 2.4 (iii) 3.0 **(iv) 2.5**

(b) System.out.println(16.0/3);

(i) 5.3333333 **(ii) 5.333333333333333** (iii) 5.3 (iv) 5

(c) int x=3;

switch(x)

{

case 1: System.out.println("ONE"); break;

case 1+1: System.out.println("TWO"); break;

case 2+1: System.out.println("THREE");

}

(i) ONE (ii) TWO **(iii) THREE** (iv) Compiler error

(d) If x = 9, find the value of x* = (--x/x++) + ++x – (x--%x);

(i) 18 (ii) 108 **(iii) 90** (iv) 20

(e) int i, n=1;

for(i =1; i>=5; i++)

n=n*i;

System.out.println(i+ "," + n);

(i) 6, 120 **(ii) 1, 1** (iii) infinite loop (iv) compiler error

SECTION B (20 Marks)

Question 7

Design a class overload a function series() as follows:

void series() – which prints the following series:

3 33 333 3333 33333

void series(int n) – which finds the sum of the series as follows:

$$S=\frac{1}{2}+\frac{2}{3}+\frac{3}{4}+\frac{4}{5}+\ldots\ldots \text{ n terms}$$

Fill in the blanks of the given program with appropriate java statements –

```
public class Overload
{
   void series()
    {
       int x=(a)____;
      for(int i=1; (b)_____; i++)
      {
         x= (c) _______;
        System.out.print(x+ “  ”);
      }   }
    void series(int n)
    {
       (d)_____sum=0;
      for(int i=1; i<=n; (e)_____)
      {
        sum = (f)_______sum + i/(i+1.0);
      }
      System.out.println(“Sum of the series=”+sum);
    }  }
```

(a) **(i) 0** (ii) 1 (iii) 3 [1]

(b) (i) i<=4 **(ii) i<=5** (iii) i<=6 [1]

(c) (i) x+10*3 (ii) x*3+10 **(iii) x*10+3** [1]

(d) (i) int **(ii) double** (iii) long [1]

(e) **(i) i++** (ii) i+=2 (iii) i+=3 [1]

(f) (i) i/(i+1) (ii) (i+1)/i **(iii) i/(i+1.0)** [1]

Question 8

The following program is based on the specification given below. Fill in the blanks with appropriate java statements.

Class name: Library

Instance variables/Data members:

String name – to store name of the book

int days – to store number of days book return late.

double fine – to store fine charged

Member methods:

Library() – A parameterised constructor to initialize data members.

void input() – to input name of the book and number of days return late.

void calculate() – calculate the fine charged as follows:

First five days	40 paise per day
Next five days	60 paise per day
Above ten days	80 paise per day

void print() – Display the fine charged.

Write a main method to create an object of a class and call the above member methods.

```
import java.util.*;
public class (a)_____
{
    String name;
    int days;
   double fine;
   Scanner sc = new Scanner(System.in);
   Library(String n, int d)
   {
     (b)_____
     }
    void input()
    {
      System.out.println("Enter name of the book and number of days book return late");
     name= sc.nextLine();
     days=sc.nextInt();
    }
```

```
    void calculate()
    {
      if(days<=5)
      fine=days*0.40;
     else if(days<=10)
      fine= (c)_______
      else
     fine= (d)_________
     }
    void print()
    {
      System.out.println("Fine charged="+(e)_____);
     }
    public static void main(String args[])
   {
     Library obj = new Library((f)_______);
     obj.input();
     obj.calculate();
     obj.display();
    }
}
```

(a) (i) library **(ii) Library** (iii) LIBRARY [1]

(b) (i) name= ""; days=0

(ii) n=name; d=days;

(iii) name=n; days=d; [1]

(c) (i) 5*0.40 + (days-5)*0.60;

(ii) days*0.40 +(days-5)*0.60;

(iii) days*0.40 +days*0.60; [1]

(d) (i) days*0.40 + days*0.60 + (days-10)*0.80;

(ii) days*0.40 + days*0.60 + days*0.80;

(iii) 5*0.40 + 5*0.60 + (days-10)*0.80; [1]

(e) (i) name **(ii) fine** (iii) days [1]

(f) **(i) "",0** (ii) 0, "" (iii) "", 0.0 [1]

Empty rehta rai

Question 9

The following program segment checks whether the user entered number is Automorphic number or not. An Automorphic number is the number which is contained in the last digit(s) of its square.

Example: 25 is Automorphic number as its square is 625 and 25 is present as the last two digits.

Fill in the blanks with appropriate java statements.

```
void Automorphic(int n)
{
   int sq = (a)_______;
   int temp=n, c=0;
   while((b) _____)
   {
     n=n/10;
     (c)_____;
    }
    if((d)_____ == temp)
  System.out.println("It is an Automorphic number");
 else
  System.out.println("It is not an Automorphic number");
}
```

(a) (i) n/2

(ii) n*2

(iii) n*n [1]

(b) (i) n==0

(ii) n!=0

(iii) n%2==0 [1]

(c) (i) c--

(ii) c+=n

(iii) c++; [1]

(d) (i) sq%(int)Math.pow(10,c);

(ii) (int)Math.pow(10,c)%temp

(iii) sq%100 [1]

Question 10

Read the paragraph given below and answer the questions given below:

Case study.

Function/Method is a program module used at different instances in a program to perform a specific task. It reuses the segment of operations, as and when necessary, by simply using the method name. A program that uses a method occupies less memory space and executes faster. Java uses two types of functions, User-defined functions and In-built functions. User-defined functions are created by the programmer to reduce the complexity of the program and it can be parameterised or non parameterised functions.

There are two ways of invoking a function, call by value and call by reference. Call by value is a process of passing a copy of actual parameters to the formal parameters. Any change made in actual parameters does not reflect on the actual parameters. Pass by reference is the process of passing the reference of the actual parameters to the formal parameters in such a way that any change made in formal parameters will be reflected to the actual parameters.

(a) A block of statements used to perform specific task is known as_____

(i) Parameters **(ii) Methods** (iii) Keywords [1]

(b) It is a process of passing the address of actual parameter to the formal parameters.

(i) Call by value **(ii) Call by reference** (iii) Call by address [1]

(c) Which of the following is not an advantage of a function?

(i) Reusability (ii) Occupies less space **(iii) Lengthy program code** [1]

(d) Which of the following is a user-defined function?

(i) obj.Sum(10,20) (ii) Math.sqrt(25) (iii) System.out.println("PPS") [1]