**Test 1 key**

**Object Oriented Programming (15 CS 2002)**

**For the a.y. 2016-17- II sem(ECE/EEE/PE)**

**Basically programs are logic oriented, please verify whether concept to be used in the given question is followed by the student is primary objective for evaluation**.

**Note: Points to be tested for every question is mentioned with key.**

Q.no 1(a) Write a java program to read necessary dimensions of the cube and print its area and volume.

1.student has to read only one dimension, because it is cube

2.caluclation and print of area and volume

import java.util.Scanner;

class OneA{

public static void main(String args[]){

Scanner in=new Scanner(System.in);

double d1,a,v;

System.out.println("Enter dimension of the cube");

d1=in.nextDouble();

a=d1\*d1;

v=d1\*d1\*d1;

System.out.println("area of the box ="+a);

System.out.println("volume of the box ="+v);

}

 }

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 1.(b) Develop a java program to update the balance in the bank account, two methods are deposit(double) which adds the deposited amount to balance and withdraw(double) , which subtracts the withdrawn amount from balance. Display the output as what is the old balance and what is the new balance?

1. amount for deposit/withdraw should be read from main() method

2. deposit(double) should be written

3. withdraw(double) should be written

4.balance should be reflected after any transaction

import java.util.Scanner;

class OneB{

 double balance=10000.00;

void deposit(double depAmt){

System.out.println(" old balance = Rs."+balance);

balance=balance+depAmt;

System.out.println("successfully deposited");

System.out.println(" new balance = Rs."+balance);

}

void withdraw(double wthAmt){

System.out.println(" old balance = Rs."+balance);

balance=balance - wthAmt;

System.out.println("successfully withdrawn");

System.out.println(" new balance = Rs."+balance);

}

public static void main(String args[]){

Scanner in=new Scanner(System.in);

TwoB ac1=new TwoB();

double dep,withdra;

System.out.println("Enter amount to deposit");

dep=in.nextDouble();

ac1.deposit(dep);

System.out.println("Enter amount to withdraw");

withdra=in.nextDouble();

ac1.withdraw(withdra);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 2(a): Write a java program to compute area and volume of a box with two dimensions are equal, read necessary dimensions and print output.

1. read only two dimensions

2.calculate and print both area and volume

import java.util.Scanner;

class TwoA{

public static void main(String args[]){

int w,d,h,a,v;

Scanner in=new Scanner(System.in);

System.out.println("Enter width and depth");

w=in.nextInt();

d=in.nextInt();

h=d;

a=w\*d;

v=w\*d\*h;

System.out.println("area="+a);

System.out.println("volume="+v);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 2(b): Develop a java program using class and object model to compute the bill in a hotel with dataEntry() method to read data and a menu to choose item and a variable to read number of items selected, item cost is initialized in the program.

1.implement class and object model

2.menu should be there

3.dataEntry() method

4. item cost should be initialised

5. number of items only to read

import java.util.Scanner;

class TwoB{

int cost1;

int cost2;

void dataEntry(){

cost1=20;

cost2=10;

}

public static void main(String args[]){

int n,ch,amt=0;

Scanner in=new Scanner(System.in);

TwoB hb=new TwoB();

hb.dataEntry();

System.out.println("welcome to abc hotel");

System.out.println("1. Dosa");

System.out.println("2. Idlee");

System.out.println( "pl. Take a choice");

ch=in.nextInt();

switch(ch) {

case 1:{ System.out.println("How many dosaas you want");

 n=in.nextInt();

 amt= n \*hb.cost1;

 break;

 }

case 2:{ System.out.println("How many Idlees you want");

 n=in.nextInt();

 amt= n \*hb.cost2;

 break;

 }

default: System.out.println("wrong choice");

}

System.out.println("pl. Pay Rs."+amt);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 3(a): Write a java program to read two integer numbers, use bitwise left shift by one bit on first number and right shift by two bits on second number, display results.

1. should use bitwise left shift operator

2. use bitwise right shift operator

3. read two numbers

4. print two outputs

import java.util.Scanner;

class ThreeA{

public static void main(String args[]){

int a;

int b;

int c,d;

Scanner in=new Scanner(System.in);

System.out.println("enter a and b data");

a=in.nextInt();

b=in.nextInt();

c=a<<1;

d=b>>2;

System.out.println("after left shift by 1 bit, a="+c);

System.out.println("after right shift by 2 bits, b="+d);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 3(b): Develop a Java program to define a class called Bride with 3 instance variables, brideName, age, qualification and a method to set the variables and another method to display the variables. return types and arguments are your choice.

1.class and object model

2. all instance variables

3.dataEntry()

4. display()

import java.util.Scanner;

class Bride{

String brideName;

int age;

String qualification;

void dataEntry(){

Scanner in = new Scanner(System.in);

System.out.println("enter name, age, qualification");

brideName=in.nextLine();

age=in.nextInt();

qualification=in.next();

}

void display(){

System.out.println(" bride name="+brideName);

System.out.println(" bride age ="+age);

System.out.println(" bried qualification ="+qualification);

}

public static void main(String args[]){

Bride varun = new Bride();

varun.dataEntry();

varun.display();

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 4(a): Write a java program to read three marks as type double, pass mark is 40 in every course. Find out the result is pass or fail.

1. read three numbers

2. chech for pass/fail condition

3. output

import java.util.Scanner;

class FourA{

public static void main(String args[]){

Scanner in=new Scanner(System.in);

double m1,m2,m3;

System.out.println("Enter three marks as double");

m1=in.nextDouble();

m2=in.nextDouble();

m3=in.nextDouble();

if((m1<40)||(m2<40)||(m3<40))

System.out.println("result is FAIL");

else

System.out.println("result is PASS");

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 4(b): Develop a java program to read three dimensions of the box from main() method, calculate area and volume from computeArVol(double,double,double) method and print area and volume of the box.

1. Three dimensions to read from main() method only

2. calculate area and volume only in void computearVol(double,double,double)

import java.util.Scanner;

class FourB{

static void computeArVol(double x, double y, double z){

double a,v;

a= x\*y;

v=x\*y\*z;

System.out.println("area of the box ="+a);

System.out.println("volume of the box ="+v);

}

public static void main(String args[]){

Scanner in=new Scanner(System.in);

double d1,d2,d3;

System.out.println("Enter three dimensions as double");

d1=in.nextDouble();

d2=in.nextDouble();

d3=in.nextDouble();

computeArVol(d1,d2,d3);

 }

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 5(a): Write a java program to read your name, phoneNo, city, pinCode and print name, phoneNo in one line and city, pinCode after two lines.

This question is only demonstration of &&, || and ! operators.

Student can choose any illustration.

1.use proper types

2. should use how to provide two empty lines.

3. print all data

import java.util.Scanner;

class FiveA{

public static void main(String args[]){

Scanner in=new Scanner(System.in);

String name;

int phoneNo;

String city;

int pinCode;

System.out.println("Enter name");

name=in.next();

System.out.println("Enter phone number");

phoneNo=in.nextInt();

System.out.println("Enter city");

city=in.next();

System.out.println("Enter pin code number");

pinCode=in.nextInt();

System.out.println(name +"\t" +phoneNo);

System.out.println("\n\n");

// The following is also accepted...

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

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

System.out.println(city +"\t"+pinCode);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 5(b): Develop a java program to compute the area and volume of a box using dataEntry() method to read input data in the form of an array and write area and volume methods for the above respectively, display the output.

1. Array should be used to read all dimensions

2. dataEntry() method

3. calculate and print area and volume

import java.util.Scanner;

class FiveB{

Scanner in=new Scanner(System.in);

int d[]=new int[3];

int ar;

int vol;

void dataEntry(){

System.out.println("Enter three dimensions");

for(int i=0;i<3;i++)

d[i]=in.nextInt();

}

void area(){

ar=d[0]\*d[1];

System.out.println("area of the box="+ar);

}

void volume(){

vol=d[0]\*d[1]\*d[2];

System.out.println(" volume of the box="+vol);

}

public static void main(String args[]){

FourB fb=new FourB();

fb.dataEntry();

fb.area();

fb.volume();

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 6(a): Write a java program to read itemName as string, itemCost as double, noOfItems as integer. Compute totalBill and print all inputs and output,Use Scanner class.

1. read three data items as per the identifiers provided with types

2. compute the calculation

3. print output

import java.util.Scanner;

class SixA{

public static void main(String args[]){

Scanner in = new Scanner(System.in);

String itemName;

double itemCost;

int noOfItems;

double totalBill=0;

System.out.println("Enter name, cost, quantity");

itemName=in.nextLine();

itemCost=in.nextDouble();

noOfItems=in.nextInt();

totalBill=itemCost\*noOfItems;

System.out.println("you ordered ="+itemName);

System.out.println("unit price Rs."+itemCost);

System.out.println("quantity ordered="+noOfItems);

System.out.println("pl. pay Rs."+totalBill);

}

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q.no. 6(b): Develop a java program to read connectionNo, oldReading, newReading, take care so that newReading is not lessthan oldReading and calculate the billAmount. Charges are as follows: unitsConsumed<=100 ; Rs.2/unit, 101 to 500 ; Rs.5/unit otherwise Rs.10/unit

1. read all data

2. compute units consumed

3. take care of condition given(old>=new)

4. calculate billAmount depending the slabs given

5. print output

import java.util.Scanner;

class SixB{

String connectionNo;

double oldReading;

double newReading;

double bill\_amount;

double billing\_units;

void data\_entry(){

Scanner input=new Scanner(System.in);

System.out.println("enter connection number");

connectionNo=input.nextLine();

System.out.println("enter previous reading");

oldReading=input.nextDouble();

System.out.println("enter present reading");

newReading=input.nextDouble();

}

void compute\_bill(){

if(newReading>=oldReading){

billing\_units=newReading-oldReading;

if (billing\_units<=100)

 bill\_amount=billing\_units\*2;

else if (billing\_units>100 && billing\_units<=500)

 bill\_amount=billing\_units\*5;

else if (billing\_units>500)

 bill\_amount=billing\_units\*10;

 System.out.println("Pl. pay Rs."+bill\_amount);

 }

else

 System.out.println("Enter correct new reading");

}

public static void main(String args[]){

double total\_amt;

SixB b1= new SixB();

 b1.data\_entry();

b1.compute\_bill();

 }

}

 **------------------------------- End of Key TEST 1-------------------------**