Example final java1 - from T. kanar

Question 1: trace

```
public class Exam1{
static int num=9, sum=0;
public static void main (String args[])
{ for (int  i=0 ; i <1 ; i++)
{ int num =0;
method(num);
System.out.println(num+"  "+sum);
}
for (int i=0;i<2;i++)
{ num++;
method(num);
System.out.println(num+"  "+sum);
}
System.out.println(num+"  "+sum);
}
public static void method (int num)
{ num ++;
sum++;
System.out.println(num+"  "+sum);
}
}
```

Run :

1 1

0 1

11 2

10 2

12 3

11 3

11 3

****

```
public class Exam2{
public static void main (String args[])
{ point p1 =new point();
p1.x=1;
p1.y=2;
p1.z=3;
point p2 =new point();
p2.x=8;
p2.y=5;
p2.z=0;
point p3 =p2;
p2=p1;
System.out.println(p1.x+" "+p1.y+" "+p1.z);
System.out.println(p2.x+" "+p2.y+" "+p2.z);
System.out.println(p3.x+" "+p3.y+" "+p3.z);
}}

class point{
int x,y,z;
}
```

1 2 3

1 2 3

8 5 0

Question 2 : find and correct errors in the following code segments(1 error each):

int [ ] list ={1,2,3 }; System . out .print(list [Math.pow(0,1)]}; Pow return only double , so we cant use the value as index	Scanner read; Read=new Scanner (System.in); **Char c = read .next();** Error char reading

Time T;
T.hours=9;
 	
T is null object , we must initialize it first
	public int m(int [ ] b){
	int [ ] x= {1,2,3};
	return x;
	}
	Return array value

Question 3:

1-write a statement that print the odd elements of an array

```
for(int i = 0 ; i < list.length ; i++)
if(i % 2 == 1 )    // elements not values if we want to print Odd values (if(lis[i] %2 == 1)
System.out.print( list[i] + " " ) ;
```

2- write java statement that print the second max number in an array of integers

```
int[] list = {14 , 55 , 66 , 4 , 8, 6};
int max1 = list[0];
int max2 = list[0];
for(int i = 0 ; i < list.length ; i++)
{
if( list[i] > max1 )
{
max2 = max1 ;
max1 = list[i] ;
}
else
if( list[i] > max2)
max2 = list[i] ;
}
System.out.println("Second max value in array = " + max2);
```

3- write a method that receive array of double ,then create array of integer containing the same numbers as the received array (only the integer part) then , return this array of integer.

```
public static int[] creat(double[] list)
{
int[]  B = new int[ list.length] ;
for(int i = 0 ; i < list.length ; i++)
B[i] = (int)list[i] ;

return B ;
}
```

4- - write a method that receive tow integers , and return true if the first number is divisible by the second , false otherwise.

```
public static boolean isDivid(int a , int b ){
if( a % b == 0 )
return true;
else
return false ;
}
==========================
```

Question 4 :

A) From the UML in front of you write the corresponding class. The class methods perform the following :

Student
- name : string - id: int [ ] - dateofBirth : String - graduted : boolean - GPA : double - gender : char
+ student (n:String , i : int [ ] , data :String , grd : boolean, gpa : double , g:char) + getId() :int [ ] + getAge(currentDate : String) : double + isGraduated () : boolean +getGPA() double + getGender () : char

dateofBirth is String that store the data of the birth in 'mm-yyyy' format the method getAge calculates and return age of student .

Hint : if the entered month is greater than the current one than you calculate it like this The_ months =(12-month) + current_Month .

B) Write a class testStudent that contains a main method , then :

- create 2 object of the class student .

- print student information (including its age)

```
import java.util.Scanner;
class Student
{
private String name;
private int id[] ;
private String DateOfBirth;
private boolean graduate;
private double GPA ;
private char gender ;

public Student(String n, int[] d, String date, boolean g, double gpa, char gn) {
name = n;
id = d;
DateOfBirth = date;
graduate = g;
GPA = gpa;
gender = gn;
}

public double getAge(String currentDate)
{
int SM = Integer.parseInt(DateOfBirth.substring(0 , 2 ) );
int SY = Integer.parseInt(DateOfBirth.substring(3 ) );

int CM = Integer.parseInt(currentDate.substring(0 , 2 ) );
int CY = Integer.parseInt(currentDate.substring(3 ) );


double month;
int year ;
if( SM > CM )
month = (12 - SM) + CM ;
else
month = CM - SM ;

year = CY - SY ;

month = month / 100 ;
return  year + month;
}

public String getName()
{
return name ;
}

public int[] getId() {
return id;
}

public boolean isGraduate() {
return graduate;
}

public double getGPA() {
return GPA;
}
```

```
public char getGender() {
return gender;
}
}
public class TestStudentFinal3 {

public static void main(String[] args) {
Scanner input = new Scanner(System.in );

int[] id1 = {1,2,3,4,5};
Student s1 = new Student("Lama" , id1 , "02-2002" , true , 4.5 , 'f' ) ;
//-------------
int[] id2 = {4,5,6,7,8};
Student s2 = new Student("Maha" , id2 , "07-1999" , false , 3.5 , 'f' ) ;
//-------------

System.out.println("student 1 " + s1.getName() + ", age : " + s1.getAge("12-2019") + " year ");
System.out.println("GPA : " + s1.getGPA() + " , Graduate : " + s1.isGraduate() );
System.out.println("Genger : " + s1.getGender() );

System.out.print(" id : ");
int list[]=  s1.getId() ;
for( int i = 0 ; i < list.length ;i++)
System.out.print( list[i]) ;

System.out.println("");

//----------------------
System.out.println("student 2 " + s2.getName() + ", age : " + s2.getAge("12-2019")+ " year ");
System.out.println("GPA : " + s2.getGPA() + " , Graduate : " + s2.isGraduate() );
System.out.println("Genger : " + s2.getGender() );

System.out.print(" id : ");
int list2[]=  s2.getId() ;
for( int i = 0 ; i < list2.length ;i++)
System.out.print( list2[i]) ;
System.out.println("");
}
}
```

run:

student 1 Lama, age : 17.10 year

GPA : 4.5 , Graduate : true

Genger : f

id : 12345

student 2 Maha, age : 20.1 year

GPA : 3.5 , Graduate : false

Genger : f

id : 45678