

CLASS IX : REVISION GUIDELINES, SEPT 2011- KP

Note that the answers are given in short and only intended to relate you. Refer to your book and register also.

PowerPoint

See the book for short 1-2 line answers. Do not spend much time over Power Point

1. What is a presentation? Give 2 uses of PowerPoint.
2. What is a Slide? Name its main components.
3. Name the 4 different options to create a presentation.
4. Name the 5 main views in PowerPoint with one main characteristic of each view.
5. Write the steps for-
 - a. Creating a new slide.
 - b. Running the slide show.
 - c. Changing the slide background.
 - d. Printing a presentation.
 - e. Insert a clipart in a slide.

Java Theory

1. List the 8 data types available in Java with their sizes.

char	2 Bytes
byte	1 Byte
short	2 Bytes
int	4 Bytes
long	8 Bytes
float	4 Bytes
double	8 Bytes
boolean	1 Byte

2. Give the format of a java program (also mention the filename)

```
class A
{
    public static void main(String args[])
    {
        declarations
        program-statements
    }
}
```

Filename: A.java

3. Show an example to demonstrate the difference between prefix and postfix versions of the increment and the decrement operators of Java.

E.g.1 `x=5;`
`y=x++ * 2;`
`Sop(x+""+y);`
 Output: 6 10 (Because x increases after evaluation of the equation)

E.g.2 `x=5;`

`y=++x * 2;`

`Sop(x+""+y);`

Output: 6 12 (Because x increases before evaluation of the equation)

4. Differentiate between –

- a. If and switch
 - Switch checks just one variable
 - Switch only checks for equality
 - Switch can only check integer or character variables
 - Switch has no *else*, but has *case*
 - Switch can match with constant values only
 - (Reverse the sentences above for if)
- b. = and ==
 - = is the assignment operator
 - = = is a relational operator to check for equality
- c. ! and !=
 - ! in a logical operator which reverses a condition
 - != is a relational operator to check for inequality
- d. If and ternary operator.
 - If is a statement whereas the ?: is an operator.
 - Else is optional in if but not in ?:
- e. print() and println() functions.
 - print() keeps the cursor on the same line after printing.
 - println() takes the cursor to the next line after printing.
- f. For and While
 - Number of times are known in a for loop but not necessarily in a while loop,
- g. While and Do-while
 - In a while-loop, the condition is checked before executing the body, whereas in a do-while loop it is checked afterwards.
- h. A Conditional and a Looping statement.
 - The body of a conditional statement is meant to be executed just once whereas again and again in a loop.
- i. % and / operators.
 - % gives the quotient, / gives the remainder.
- j. break and continue.
 - break- Ends a loop or exits the switch block.
 - continue- starts the next iteration of the loop.

5. Define

- a. Variable – which stores a value e.g. a, b, c, x, y, z.
- b. Constant – A fixed value like 5, 3.14, 'A', "Yes"
- c. JVM – Java Virtual Machine, Software responsible for compiling and running Java programs.
- d. Byte Code – A java program converted to 0s and 1s, which can run on any machine.
- e. Compiler – Which converts the whole Java program to machine language, at one go.
- f. Interpreter – Which converts the whole Java program to machine language, line by line.
- g. ASCII value – A number associated to a character. E.g. 'A' = 65.

- h. Update expression/Counter – Which changes the value of a variable. E.g. `i++` or `s=s+i`.
- i. Block – A group of statements enclosed in `{ }`.
- j. Source code – The uncompiled Java program written by the programmer.

6. What are the two types of conversions in Java? Explain with examples.

Implicit- Occurs automatically, when there are two different data types in an equation, the answer is promoted to a higher data type. E.g. `Sop(5.0/2)` will print 2.5

Explicit- Type Casting is required. E.g. `Sop((double)5/2)` will print 2.5, otherwise `Sop(5/2)` would have printed 2.

7. What is the role of the *break* statement in switch?

To come out of the switch statement and prevent fall-through.

8. What is the role of the *default* statement in switch?

It's a special block which is executed when none of the case is true.

9. Give the three logical and six relational operators in Java. Also show the working of the logical operators using a truth table.

Relational - `<` `<=` `>` `>=` `==` `!=`

Logical - `&&` `||` `!`

Working of `&&` and `||`:

Condition 1	Condition 2	Result with <code>&&</code>	Result with <code> </code>
False	False	False	False
False	True	False	True
True	False	False	True
True	True	True	True

Working of `!` :

Condition	<code>!</code> makes it
False	True
True	False

10. What is a nested if? Show with an example.

An if inside an if.

Check for examples in programs in your register/book.

Java Programs

General

1. Write a Java program to solve $\sqrt{s(s-a)(s-b)(s-c)}$.

//Area of a triangle Heron's form

```
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double a,b,c,s,area;
    System.out.println( "Enter a, b, and c" );
    a=Double.parseDouble(br.readLine());
    b=Double.parseDouble(br.readLine());
    c=Double.parseDouble(br.readLine());
    s=(a+b+c)/2;
    area=Math.sqrt(s*(s-a)*(s-b)*(s-c));
    System.out.println( "Area = "+area );
  } //main
} //class
```

2. Write a program using functions to input p & b and display h using the formula $\sqrt{p^2 + b^2}$

//Finding H

```
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double p,b,h;
    System.out.println( "Enter p and b" );
    p=Double.parseDouble(br.readLine());
    b=Double.parseDouble(br.readLine());
    h=Math.sqrt(Math.pow(p,2)+Math.pow(b,2)); // p*p or b*b is also correct
    System.out.println( "H = "+h );
  } //main
} //class
```

3. Input the radius and display the area and the circumference of a circle.

//circle

```
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double r,a,c;
```

```

System.out.println( "Enter radius" );
r=Double.parseDouble(br.readLine());
a=3.14*r*r;
c=2*3.14*r;
System.out.println( "Area = "+a );
System.out.println( "Circ' = "+c );
} //main
} //class

```

4. Input marks in three subjects. Display their sum and average.

```

//marks
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double m1, m2, m3, tot, avg;
    System.out.println( "Enter marks in 3 subjects" );
    m1=Double.parseDouble(br.readLine());
    m2=Double.parseDouble(br.readLine());
    m3=Double.parseDouble(br.readLine());
    tot=m1+m2+m3;
    avg=tot/3.0;
    System.out.println( "Total = "+tot );
    System.out.println( "Average = "+avg );
} //main
} //class

```

5. Input a number from the user and display 33.3% of that number.

```

//%age
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double num, per;
    System.out.println( "Enter a number" );
    num=Double.parseDouble(br.readLine());
    per=num*33.3/100;
    System.out.println( "33.3% = "+per );
} //main
} //class

```

If/Switch

1. Input a number and display if it is even or odd.


```

{ public static void main(String args[])throws IOException
{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    int y;
    System.out.println( "Enter a year" );
    y=Integer.parseInt(br.readLine());
    if(y%100==0)
        if(y%400==0)
            System.out.println("Leap");
        else
            System.out.println("Not Leap");
    else
        if(y%4==0)
            System.out.println("Leap");
        else
            System.out.println("Not Leap");
    }//main
} //class

```

4. Input the bill amount for a customer and display the amount payable by him after calculating the discount as follows

Bill	Discount
Below 10000	NIL
10001 to 25000	10%
25000 or higher	12.25%

```

//bill-discount
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double bill=0, discount=0, amount=0;
    System.out.println( "Enter bill amount" );
    bill=Double.parseDouble(br.readLine());
    if(bill<=10000)
    {   discount=0;
    }
    else if(bill>=10001 && bill<=25000)
    {   discount=bill*10.0/100.0;
    }
    else if(bill>=25000)
    {   discount=bill*12.25/100.0;
    }
    amount=bill-discount;
    System.out.println("Bill = "+bill);
    System.out.println("Discount = "+discount);
    System.out.println("Amount after discount = "+amount);
}

```

```

} //main
} //class

```

5. Input the number of days a hotel room is rented and display the bill amount. The tariff is as follows-
- First 4 days, Rs. 2000 per day.
 - Next 3 days, Rs. 1600 per day.
 - Over a week, Rs. 1000 per day.

```

//Hotel Tarrif
import java.io.*;
class IX
{
    public static void main(String args[])throws IOException
    {
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        int days;
        double tarrif=0;
        System.out.println( "Enter days" );
        days=Integer.parseInt( br.readLine());
        if(days<=4)
        {
            tarrif=days*2000;
        }
        else if(days>=5 && days<=7)
        {
            tarrif=(2000*4)+( (days-4)*1600 );
        }
        else
        {
            tarrif=(2000*4)+( 3*1600 )+( (days-7)*1000 ); ;
        }
        System.out.println("Tarrif = "+tarrif);
    } //main
} //class

```

6. Display a menu asking the user if he wishes to display Digits from 0 to 9 or alphabets from A to Z. Ask the user's choice and program accordingly using switch.

```

//Menu
import java.io.*;
class IX
{
    public static void main(String args[])throws IOException
    {
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        int choice;
        System.out.println("1. Display digits");
        System.out.println("2. Display alphabets");
        System.out.println("Enter choice");
        choice=Integer.parseInt(br.readLine());
        switch(choice)
        {
            case 1: for(int i=0; i<=9; i++)
                    {
                        System.out.print( i );
                    }
        }
    }
}

```

```

        }
        break;
    case 2: for(char i='A'; i<='Z'; i++)
        {   System.out.print( i );
            }
        break;
    default: System.out.println("Wrong choice");
} //switch
} //main
} //class

```

7. Input a colour code and display the colour name. The codes can be 'R', 'G' or 'B' and their respective names are Red, Blue and Green.

```

//Colour-code
import java.io.*;
class IX
{   public static void main(String args[])throws IOException
    {   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        char c;
        System.out.println("Enter a colour code");
        c=(char)br.read();
        switch(c)
        {   case 'R': System.out.println( "Red" );
            break;
            case 'G': System.out.println( "Green" );
            break;
            case 'B': System.out.println( "Blue" );
            break;
            default: System.out.println("Wrong code");
        } //switch
    } //main
} //class

```

8. Take necessary inputs. Ask the user if he wants to calculate the simple or the compound interest. Using switch, perform the calculation required by the user.

```

//Menu
import java.io.*;
class IX
{   public static void main(String args[])throws IOException
    {   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        double p,r,t,ci,si;
        int choice;
        System.out.println("Enter P, R and T");
    }
}

```



```

{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    double phy, che, mat, avg;
    System.out.println( "Enter marks in 3 subjects" );
    phy=Double.parseDouble(br.readLine());
    che=Double.parseDouble(br.readLine());
    mat=Double.parseDouble(br.readLine());
    avg=(phy+che+mat)/3.0;
    if(avg>75 || phy>90 || che>90 || mat>90)
    {   System.out.println( "Admission granted" );
        }
    else
    {   System.out.println( "Admission not granted" );
        }
    }//main
} //class

```

For/While

1. Input 10 numbers and display the sum and average of even numbers only.

```

//sum, avg
import java.io.*;
class IX
{   public static void main(String args[])throws IOException
    {   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        int num;
        double sum, avg, count;
        sum=0;
        count=0;
        for(int i=1; i<=10; i++)
        {   System.out.println( "Enter a number" );
            num=Integer.parseInt( br.readLine() );
            if(num%2==0)
            {   sum=sum+num;
                count++;
            }
        }
        avg=sum/count;
        System.out.println( "Sum = "+sum );
        System.out.println( "Avg = "+avg );
    } //main
} //class

```

2. Write a Java program to display the squares of all the numbers from 1 to 10. (1,4,9,16...100)

```
//squares
class IX
{ public static void main(String args[])
  {
    for(int i=1; i<=10; i++)
    { int sqr=i*i;
      System.out.println( sqr );
    }
  }
}

```

3. Write a program to display all uppercase alphabets, using a “for”, “while” and a “do while” loop.

```
//Alphabets
class IX
{ public static void main(String args[])
  { char c;
    //Using for
    for(c='A'; c<='Z'; c++)
    { System.out.println( c );
    }
    //using while
    c='A';
    while(c<='Z')
    { System.out.println( c );
      c++;
    }
    //using do-while
    c='A';
    do
    { System.out.println( c );
      c++;
    }while(c<='Z');
  }
}

```

4. Input a number and display if it is prime or composite.

```
//prime
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    int num, count;
    System.out.println( "Enter a number" );
    num=Integer.parseInt( br.readLine() );
  }
}

```

```

count=0;
for(int i=1; i<=num; i++)
{ if(num%i==0)
  { count++;
  }
}
if(count==2)
{ System.out.println( "Prime" );
}
else
{ System.out.println( "Composite" );
}
} //main
} //class

```

5. Input a number and display if is perfect or not. A number is said to be perfect if the sum of its factors (excluding the number itself) is equal to the number. E.g. if the number is 6, then the sum of factors of 6 (1,2, and 3) is 6.

```

//perfect
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
{ BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
int num, sum;
System.out.println( "Enter a number" );
num=Integer.parseInt( br.readLine() );
sum=0;
for(int i=1; i<num; i++)
{ if(num%i==0)
  { sum=sum+i;
  }
}
if(sum==num)
{ System.out.println( "Perfect" );
}
else
{ System.out.println( "Not Perfect" );
}
} //main
} //class

```

6. Input a number and display its multiplication table till 10. The format of the output should be as shown below, assuming the input number is 9
- $$9 \times 1 = 9$$

9 x 2 = 18
 ... (and so on till 10)

```
//mul table
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    int num, prod;
    System.out.println( "Enter a number" );
    num=Integer.parseInt( br.readLine() );
    for(int i=1; i<=10; i++)
    { prod= num * i ;
      System.out.println( num+ " x " +i+" = "+prod );
    }//for
  }//main
}//class
```

7. Input number and display the sum of its digits.

```
//sum of digits
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
  { BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    int num, sum;
    System.out.println( "Enter a number" );
    num=Integer.parseInt( br.readLine() );
    sum=0;
    while( num>0 )
    { int digit=num%10;
      sum=sum+digit;
      num=num/10;
    }
    System.out.println( "Sum of the digits = "+sum );
  }//main
}//class
```

8. Input a number and display if it is an Armstrong number or not. An Armstrong number is a number whose sum of the cube of each digit is equal to that number. E.g. $153=1^3+5^3+3^3=153$

```
//Armstrong
import java.io.*;
class IX
{ public static void main(String args[])throws IOException
```

```

{   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
    int num, sum;
    System.out.println( "Enter a number" );
    num=Integer.parseInt( br.readLine() );
    int temp=num;
    sum=0;
    while( num>0 )
    {   int digit=num%10;
        sum=sum+digit*digit*digit; //or (int)Math.pow(digit,3)
        num=num/10;
    }
    if(sum==temp)
    {   System.out.println( "Armstrong" );
    }
    else
    {   System.out.println( "Not Armstrong" );
    }
} //main
} //class

```

9. Input a number and display its reverse.

```

//reverse
import java.io.*;
class IX
{   public static void main(String args[])throws IOException
    {   BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        int num, reverse;
        System.out.println( "Enter a number" );
        num=Integer.parseInt( br.readLine() );
        reverse=0;
        while( num>0 )
        {   int digit=num%10;
            reverse=reverse*10+digit;
            num=num/10;
        }
        System.out.println( "Reverse = " + reverse );
    } //main
} //class

```

10. Input a number and display all its factors.

```

//factors
import java.io.*;
class IX

```


Q2. Show the output of the following –

```
int s=0;
for(int i=1; i<=5; i++)
{ s=s+i;
  System.out.println( i+" "+s );
}
```

1 1
2 3
3 6
4 10
5 15

```
int n=5;
while(n<1)
{ System.out.println( n );
  n--;
}
```

No Output

```
int n=5;
do
{ System.out.println( n );
  n--;
}while(n<1);
```

5

Q3. Show the output of the following –

```
int n=65;
System.out.println( n/10 );
System.out.println( n%10 );
System.out.println( (char)n );
int m= 5 + n * 10;
System.out.println( m );
```

6
5
A
655

```
int a=5;
int b=7;
int c=a++ + ++b;
System.out.println(a);
System.out.println(b);
System.out.println(c);
```

6
8
13

```
int n=5, m=10;
int x= m++ / n++;
int y= ++x * m;
System.out.println(x);
System.out.println(y);
```

3
33

END