



Java SE 8 Programmer I (1Z0-808) Question Bank With Answers



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Topic-1: Java Features

Q. Which of the following is true?

- A) Java is platform dependent but JVM is platform independent
- B) Java is platform independent but JVM is platform dependent
- C) Java Byte code is platform dependent but JVM is platform independent
- D) Java Byte code is platform independent but JVM is platform dependent

Answer: B and D

Q. Which Statement is true about Java Byte code?

- A) It can run on any platform
- B) It can run on any platform only if it was compiled for that platform
- C) It can run on any platform that has the Java Runtime Environment (JRE)
- D) It can run on any platform that has a Java Compiler
- E) It can run on any platform only if that platform has both JRE and Java Compiler

Answer: C



Topic-2: Data Types and Literals

Q1. Which of the following conversions will be performed automatically in Java ?

- A) int to byte
- B) byte to int
- C) float to double
- D) double to float
- E) None of the above

Answer: B, C

Q2. In which of the following cases explicit Type casting is required ?

- A) int to byte
- B) byte to int
- C) float to double
- D) double to float
- E) None of the above

Answer: A, D

Q3. Consider the code

```
int i = 100;  
float f = 100.100f;  
double d = 123;
```

Which of the following assignments won't compile?

- A) i=f;
- B) f=i;
- C) d=f;
- D) f=d;
- E) d=i;
- F) i=d;

Answer: A,D,F

Q4. In which of the following cases we will get Compile time error?

- A) float f = 100F;
- B) float f = (float)1_11.00;
- C) float f = 100;



D) double d = 203.22;
float f = d;

E) int i =100;
float f=(float)i;

Answer: D

Q5. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int a=10;
6)         float b=10.25f;
7)         double c=100;
8)         a = b;
9)         b = a;
10)        c = b;
11)        c = a;
12)    }
13) }
```

Which change will enable the code fragment to compile successfully?

- A) Replace a = b; with a=(int)b;
- B) Replace b = a; with b=(float)a;
- C) Replace c = b; with c=(double)b;
- D) Replace c = a; with c=(double)a;

Answer: A



Topic-3: Arrays

Q1. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String[] courses={"Java","Python","Testing","SAP"};
6)         System.out.println(courses.length);
7)         System.out.println(courses[1].length());
8)
9)     }
10) }
```

What is the output?

- A) 4
6
- B) 4
4
- C) 6
4
- D) 6
6

Answer: A

Q2. Given the following code

```
int[] x= {10,20,30,40,50};
x[2]=x[4];
x[4]=60;
```

After executing this code Array elements are

- A) 10,20,30,40,50
- B) 10,20,50,40,50
- C) 10,20,50,40,60



D) 10,20,30,40,50

Answer: C

Q3. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[] n1= new int[3];
6)         int[] n2={10,20,30,40,50};
7)         n1=n2;
8)         for(int x : n1)
9)         {
10)            System.out.print(x+":");
11)        }
12)
13)    }
14) }
```

What is the output?

- A) 10:20:30:40:50:
- B) 10:20:30:
- C) Compilation fails
- D) ArrayIndexOutOfBoundsException at runtime

Answer: A

Q4. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         /* Line-1: insert code here */
6)         x[0]=10;
7)         x[1]=20;
8)         System.out.println(x[0]+":"+x[1]);
9)     }
10) }
```



Which code fragment required to insert at Line-1 to produce output 10:20

A) `int[] x = new int[2];`

B) `int[] x;`
`x = int[2];`

C) `int x = new int[2];`

D) `int x[2];`

Answer: A

Q5. Given Student class as

```
1) class Student
2) {
3)     int rollno;
4)     String name;
5)     public Student(int rollno,String name)
6)     {
7)         this.rollno=rollno;
8)         this.name=name;
9)     }
10) }
11) public class Test
12) {
13)     public static void main(String[] args)
14)     {
15)         Student[] students ={
16)             new Student(101,"Durga"),
17)             new Student(102,"Ravi"),
18)             new Student(103,"Shiva"),
19)             new Student(104,"Pavan")
20)         };
21)         System.out.println(students);
22)         System.out.println(students[2]);
23)         System.out.println(students[2].rollno);
24)     }
25) }
```

What is the output?

A) students
Shiva
103



B) [LStudent;@61baa894
Shiva
103

C) [LStudent;@61baa894
Student@66133adc
103

D) [LStudent;@61baa894
Pavan
103

Answer: C

Q6. The following grid shows the state of a 2D array:

This grid is created with the following code

```
char[][] grid= new char[3][3];  
grid[0][0]='Y';  
grid[0][1]='Y';  
grid[1][1]='X';  
grid[1][2]='Y';  
grid[2][1]='X';  
grid[2][2]='X';  
// Line-1
```

- A) grid[3][1]='X';
- B) grid[0][2]='X';
- C) grid[1][3]='X';
- D) grid[2][0]='X';
- E) grid[1][2]='X';

Answer: D

Q7. Consider the code

```
1) class Test  
2) {  
3)     public static void main(String[] args)  
4)     {  
5)         String[] s = new String[2];  
6)         int i =0;  
7)         for(String s1 : s)  
8)         {  
9)             s[i].concat("Element "+i);  
10)            i++;  
11)        }
```



```
12)   for(i=0;i<s.length;i++)
13)   {
14)       System.out.println(s[i]);
15)   }
16)   }
17) }
```

What is the result?

A) Element 0

Element 1

B) null Element 0

null Element 1

C) null

null

D) NullPointerException

Answer: D

Note: On null, if we are trying to apply any operation then we will get NullPointerException

Q8. Consider the code

```
1)  class Test
2)  {
3)      public static void main(String[] args)
4)      {
5)          int[][] n = new int[1][3];
6)          for(int i = 0; i < n.length; i++)
7)          {
8)              for (int j = 0; j > n[i].length ; j++) )
9)              {
10)                 num[i][j] = 10;
11)             }
12)         }
13)     }
14) }
```

Which option represents the state of the array after successful completion of outer for loop?

A) n[0][0]=10;

n[0][1]=10;

n[0][2]=10;



B) `n[0][0]=10;`
`n[1][0]=10;`
`n[2][0]=10;`

C) `n[0][0]=10;`
`n[0][1]=0;`
`n[0][2]=0;`

D) `n[0][0]=10;`
`n[0][1]=10;`
`n[0][2]=10;`
`n[1][0]=0;`
`n[1][1]=0;`
`n[1][2]=0;`
`n[1][3]=0;`

Answer: A

Q9. Consider the code

```
1) class Student
2) {
3)     String name;
4)     public Student(String name)
5)     {
6)         this.name=name;
7)     }
8) }
9) public class Test
10) {
11)     public static void main(String[] args)
12)     {
13)         Student[] students = new Student[3];
14)         students[1]= new Student("Durga");
15)         students[2]= new Student("Ravi");
16)         for(Student s : students)
17)         {
18)             System.out.println(s.name);
19)         }
20)     }
21) }
```



What is the result?

- A) Durga
Ravi
- B) null
Durga
Ravi
- C) Compilation Fails
- D) `ArrayIndexOutOfBoundsException`
- E) `NullPointerException`

Answer: E



Topic-4: Types of Variables

Q1. Consider the following code

```
1) public class Test
2) {
3)     String myStr="7007";
4)     public void doStuff(String s)
5)     {
6)         int myNum=0;
7)         try
8)         {
9)             String myStr=s;
10)            myNum=Integer.parseInt(myStr);
11)        }
12)        catch(NumberFormatException e)
13)        {
14)            System.err.println("Error");
15)        }
16)        System.out.println("myStr: "+myStr+" ,myNum: "+myNum);
17)    }
18)    public static void main(String[] args)
19)    {
20)        Test t = new Test();
21)        t.doStuff("9009");
22)    }
23) }
```

- A) myStr: 9009 ,myNum: 9009
- B) myStr: 7007 ,myNum: 7007
- C) myStr: 7007 ,myNum: 9009
- D) Compilation Fails

Answer: C

Explanation: In the above example, the variable myStr, which is declared inside try block is not available outside of try block. Hence while printing, instance variable myStr will be considered.



Q2. Consider the following code

```
1) public class Test
2) {
3)     public void doStuff(String s)
4)     {
5)         int myNum=0;
6)         try
7)         {
8)             String myStr=s;
9)             myNum=Integer.parseInt(myStr);
10)        }
11)        catch(NumberFormatException e)
12)        {
13)            System.err.println("Error");
14)        }
15)        System.out.println("myStr: "+myStr+" ,myNum: "+myNum);
16)    }
17)    public static void main(String[] args)
18)    {
19)        Test t = new Test();
20)        t.doStuff("9009");
21)    }
22) }
```

- A) myStr: 9009 ,myNum: 9009
- B) myStr: 7007 ,myNum: 7007
- C) myStr: 7007 ,myNum: 9009
- D) Compilation Fails

Answer: D

Explanation: myStr is local variable of try block and we cannot access outside of try block.

Q3. Consider the code

```
1) class Test
2) {
3)     int x =10;
4)     static int y = 20;
5)     public static void main(String[] args)
6)     {
7)         Test t1 =new Test();
8)         Test t2 =new Test();
9)         t1.x=100;
10)        t1.y=200;
11)        t2.x=300;
12)        t2.y=400;
```



```
13) System.out.println(t1.x+"."+t1.y+"."+t2.x+"."+t2.y);  
14) }  
15) }
```

- A) 100..400..300..400
- B) 100..400..100..400
- C) 200..400..300..400
- D) 100..200..300..400

Answer: A

Q4. Consider the following code

```
1) public class Test  
2) {  
3)     static int x;  
4)     int y;  
5)     public static void main(String[] args)  
6)     {  
7)         Test t1 = new Test();  
8)         Test t2 = new Test();  
9)         t1.x=3;  
10)        t1.y=4;  
11)        t2.x=5;  
12)        t2.y=6;  
13)        System.out.println(t1.x+":"+t1.y+":"+t2.x+":"+t2.y);  
14)    }  
15) }
```

What is the result?

- A) 3:4:5:6
- B) 3:4:3:6
- C) 5:4:5:6
- D) 3:6:4:6

Answer: C

Q5. Consider the code

```
1) public class Test  
2) {  
3)     static int count=0;  
4)     int i=0;  
5)     public void modify()  
6)     {  
7)         while(i<5)  
8)         {  
9)             i++;
```



```
10)     count++;
11)     }
12)     }
13)     public static void main(String[] args)
14)     {
15)         Test t1 = new Test();
16)         Test t2 = new Test();
17)         t1.modify();
18)         t2.modify();
19)         System.out.println(t1.count+"."+t2.count);
20)     }
21)
22) }
```

What is the result?

- A) 10..10
- B) 5..5
- C) 5..10
- D) Compilation Fails

Answer: A

Q6. Consider the code

```
1) class Test
2) {
3)     int count;
4)     public static void display()
5)     {
6)         count++;//Line-1
7)         System.out.println("Welcome Visit Count:"+count);//Line-2
8)     }
9)     public static void main(String[] args)
10)    {
11)        Test.display();//Line-3
12)        Test.display();//Line-4
13)    }
14) }
```

What is the result?

A) Welcome Visit Count: 1
Welcome Visit Count: 2

A) Welcome Visit Count: 1
Welcome Visit Count: 1

C) Compilation Fails at Line-1 and Line-2



D) Compilation Fails at Line-3 and Line-4

Answer: C

Q7. Consider the code

```
1) public class Test
2) {
3)     public static int x=100;
4)     public int y = 200;
5)     public String toString()
6)     {
7)         return y+":"+x;
8)     }
9)     public static void main(String[] args)
10)    {
11)        Test t1 = new Test();
12)        t1.y=300;
13)        System.out.println(t1);
14)        Test t2 = new Test();
15)        t2.x=300;
16)        System.out.println(t2);
17)    }
18)
19) }
```

What is the result?

- A) 300:100
200:300
- B) 200:300
200:300
- C) 300:0
0:300
- D) 300:300
200:300

Answer: A



Q8. Consider the code

```
1) public class Triangle
2) {
3)     static double area;
4)     int b=30,h=40;
5)     public static void main(String[] args)
6)     {
7)         double p,b,h;// Line-1
8)         if(area ==0)
9)         {
10)            b=3;
11)            h=4;
12)            p=0.5;
13)        }
14)        area=p*b*h;// Line-2
15)        System.out.println(area);
16)    }
17) }
```

What is the result?

- A) 6.0
- B) 3.0
- C) Compilation fails at Line-1
- D) Compilation fails at Line-2

Answer: D

Q9. Consider the code

```
1) class Demo
2) {
3)     int ns;
4)     static int s;
5)     Demo(int ns)
6)     {
7)         if(s<ns)
8)         {
9)             s=ns;
10)            this.ns=ns;
11)        }
12)    }
13)    void display()
14)    {
15)        System.out.println("ns = "+ns+" s = "+s);
16)    }
17) }
18) public class Test
```



```
19) {  
20)   static int x;  
21)   int y;  
22)   public static void main(String[] args)  
23)   {  
24)       Demo d1= new Demo(50);  
25)       Demo d2= new Demo(125);  
26)       Demo d3= new Demo(100);  
27)       d1.display();  
28)       d2.display();  
29)       d3.display();  
30)   }  
31) }
```

A) ns = 50 s = 125
ns = 125 s = 125
ns = 0 s = 125

B) ns = 50 s = 125
ns = 125 s = 125
ns = 100 s = 125

C) ns = 50 s = 50
ns = 125 s = 125
ns = 0 s = 0

D) ns = 50 s = 125
ns = 125 s = 125
ns = 100 s = 100

Answer: A

Q10. Consider the code

```
1) public class Test  
2) {  
3)   public static void main(String[] args)  
4)   {  
5)       int x = 200;  
6)       System.out.print(m1(x));  
7)       System.out.print(" "+x);  
8)   }  
9)   public static int m1(int x)  
10)  {  
11)      x = x * 2;  
12)      return x;  
13)  }  
14) }
```



What is the result?

- A) 400 200
- B) 200 200
- C) 400 400
- D) Compilation Fails

Answer: A

Q11. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         try
6)         {
7)             int n=10;
8)             int d=0;
9)             int ans=n/d;
10)        }
11)        catch (ArithmeticException e)
12)        {
13)            ans=0;//Line-1
14)        }
15)        catch(Exception e)
16)        {
17)            System.out.println("Invalid Calculation");
18)        }
19)        System.out.println("Answer="+ans);//Line-2
20)    }
21) }
```

What is the result?

- A) Answer=0
- B) Invalid Calculation
- C) Compilation Fails at Line-1
- D) Compilation Fails at Line-2
- E) Compilation Fails at Line-1 and Line-2

Answer: E



Q12. Consider the code

```
1) public class Test
2) {
3)     char c;
4)     boolean b;
5)     float f;
6)     public void print()
7)     {
8)         System.out.println("c = "+c);
9)         System.out.println("b = "+b);
10)        System.out.println("f = "+f);
11)    }
12)    public static void main(String[] args)
13)    {
14)        Test t = new Test();
15)        t.print();
16)    }
17) }
```

What is the result?

- A) c =
b = false
f = 0.0
- B) c = null
b = false
f = 0.0
- C) c = 0
b = false
f = 0.0
- D) c =
b = true
f = 0.0

Answer: A



Parameter Passing

Q13. Consider the code

```
1) public class Test
2) {
3)     public void m1(int i, int j)
4)     {
5)         i=i+10;
6)         j=j+10;
7)         System.out.println("Inside Method:"+i+".." +j);
8)     }
9)     public static void main(String[] args) {
10)        int x=100;
11)        int y =200;
12)        Test t = new Test();
13)        t.m1(x,y);
14)        System.out.println("After Completing Method:"+x+".." +y);
15)    }
16) }
```

Output:

Inside Method:110..210

After Completing Method:100..200

Q14. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int x=200;
6)         System.out.print(m1(x));
7)         System.out.print(" "+x);
8)     }
9)     public static int m1(int x)
10)    {
11)        x= x*2;
12)        return x;
13)    }
14) }
```



What is the result?

- A) 400 200
- B) 200 200
- C) 400 400
- D) Compilation Fails

Answer: A

Q15. Consider the following code

```
1) public class Test
2) {
3)     int i,j;
4)     public Test(int i,int j)
5)     {
6)         initialize(i,j);
7)     }
8)     public void initialize(int i,int j)
9)     {
10)        this.i = i*i;
11)        this.j=j*j;
12)    }
13)    public static void main(String[] args)
14)    {
15)        int i =3, j= 5;
16)        Test t = new Test(i,j);
17)        System.out.println(i+ "..."+j);
18)    }
19) }
```

What is the result?

- A) 9...25
- B) 0...0
- C) 3...5
- D) Compilation Fails

Answer: C



Q16. Consider the code

```
1) class Demo
2) {
3)     int x;
4)     int y;
5) };
6) public class Test
7) {
8)     public void m1(Demo d)
9)     {
10)         d.x=888;
11)         d.y=999;
12)     }
13)     public static void main(String[] args)
14)     {
15)         Demo d1 = new Demo();
16)         d1.x=10;
17)         d1.y=20;
18)         Test t = new Test();
19)         t.m1(d1);
20)         System.out.println(d1.x+"..." +d1.y);
21)     }
22) }
```

Output: 888...999

Explanation:

In the above example we are passing Demo object reference as argument to method m1(). Inside method m1(), we are changing the state of the object. These changes will be reflected to the caller.

Q17. Consider the code

```
1) class Product
2) {
3)     double price;
4) }
5) public class Test
6) {
7)     public void updatePrice(Product p,double price)
8)     {
9)         price=price*2;
10)        p.price=p.price+price;
11)    }
12)    public static void main(String[] args)
13)    {
14)        Product prt = new Product();
15)        prt.price=200;
```




```
16) double newPrice=100;
17)
18) Test t = new Test();
19) t.updatePrice(prt,newPrice);
20) System.out.println(prt.price+"...."+newPrice);
21) }
22) }
```

What is the result?

- A) 200.0....100.0
- B) 400.0....400.0
- C) 400.0....100.0
- D) Compilation Fails

Answer: C

Explanation:

In the above example, we are passing Product object reference as argument to updatePrice() method and within the method we are changing the state of object. These changes will be reflected to the caller.

Q18. Consider the code

```
1) public class Test
2) {
3)     int x;
4)     int y;
5)     public void doStuff(int x,int y)
6)     {
7)         this.x=x;
8)         y=this.y;
9)     }
10)    public void print()
11)    {
12)        System.out.print(x+":"+y+":");
13)    }
14)    public static void main(String[] args)
15)    {
16)        Test t1=new Test();
17)        t1.x=100;
18)        t1.y=200;
19)
20)        Test t2 = new Test();
21)        t2.doStuff(t1.x,t1.y);
22)        t1.print();
23)        t2.print();
24)    }
25) }
```



What is the result?

- A) 100:200:100:0:
- B) 100:0:100:0:
- C) 100:200:100:200:
- D) 100:0:200:0:

Answer: A

Q19. Consider the code

```
1) public class Vowel
2) {
3)     private char ch;
4)     public static void main(String[] args)
5)     {
6)         char ch1='a';
7)         char ch2=ch1;
8)         ch2='e';
9)
10)        Vowel obj1= new Vowel();
11)        Vowel obj2=obj1;
12)        obj1.ch='i';
13)        obj2.ch='o';
14)
15)        System.out.println(ch1+":"+ch2);
16)        System.out.println(obj1.ch+":"+obj2.ch);
17)    }
18) }
```

What is the result?

- A) a:e
o:o
- B) e:e
i:o
- C) a:e
i:o
- D) e:e
o:o

Answer: A



Topic-5: Main Method and Command Line Arguments

Q1. Which one of the following code examples uses valid Java syntax?

A)

```
1) public class Bunny
2) {
3)     public static void main(String[] args)
4)     {
5)         System.out.println("Bunny");
6)     }
7) }
```

B)

```
1) public class Chinny
2) {
3)     public static void main(String[])
4)     {
5)         System.out.println("Chinny");
6)     }
7) }
```

C)

```
1) public class Sunny
2) {
3)     public void main(String[] args)
4)     {
5)         System.out.println("Sunny");
6)     }
7) }
```

D)

```
1) public class Vinny
2) {
3)     public static void main(String() args)
4)     {
5)         System.out.println("Vinny");
6)     }
7) }
```

Answer: A



Q2. Given the code from the Test.java file:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         System.out.println("Hello "+args[0]);
6)     }
7) }
```

Which set of commands prints Hello Durga in the console?

- A) javac Test
java Test Durga
- B) javac Test.java Durga
java Test
- C) javac Test.java
java Test Durga
- D) javac Test.java
java Test.class Durga

Answer: C

Q3. Consider the code Test.java:

```
1) public class Test
2) {
3)     public static void main(int[] args)
4)     {
5)         System.out.println("int[] main: "+args[0]);
6)     }
7)     public static void main(Object[] args)
8)     {
9)         System.out.println("Object[] main: "+args[0]);
10)    }
11)    public static void main(String[] args)
12)    {
13)        System.out.println("String[] main: "+args[0]);
14)    }
15) }
```

and the commands

```
javac Test.java
java Test 1 2 3
```



What is the result?

- A) int[] main 1
- B) Object[] main 1
- C) String[] main 1
- D) Compilation Fails
- E) An Exception raises at runtime

Answer: C



Topic-6: Operators and Assignments

Q1. Consider the following code

```
System.out.println("5 + 2 = "+4+3);  
System.out.println("5 + 2 = "+(4+3));
```

What is the result?

A) 5 + 2 = 43
5 + 2 = 43

B) 5 + 2 = 7
5 + 2 = 7

C) 5 + 2 = 7
5 + 2 = 43

D) 5 + 2 = 43
5 + 2 = 7

Answer: D

Q2. Consider the code

```
1) public class Test  
2) {  
3)     public static void main(String[] args)  
4)     {  
5)         System.out.println("Result A:" + 4+5);  
6)         System.out.println("Result B:" + (4)+(5));  
7)     }  
8) }
```

What is the output?

A) Result A:45
Result B:45
B) Result A:45
Result B:9
C) Result A:9
Result B:45
D) Result A:9
Result B:9

Answer: A



Q3. Consider the following code

```
1) class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int x = 100;
6)         int a = x++;
7)         int b = ++x;
8)         int c = x++;
9)         int d = (a < b) ? (a < c) ? a : (b < c) ? b : c;
10)        System.out.println(d);
11)    }
12) }
```

What is the result?

- A) 100
- B) 101
- C) 102
- D) 103
- E) Compilation fails

Answer : E

Q4. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int x = 1;
6)         int y = 0;
7)         if(++x > ++y)
8)         {
9)             System.out.print("Hello ");
10)        }
11)        else
12)        {
13)            System.out.print("Hi ");
14)        }
15)        System.out.println("Durga "+x+": "+y);
16)    }
17) }
```



What is the output?

- A) Hello Durga 1:0
- B) Hello Durga 2:1
- C) Hi Durga 1:0
- D) Hi Durga 2:1

Answer: B

Q5. Consider the code

```
1) class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         if(x++<10)
6)         {
7)             System.out.println(x+" Hello India");
8)         }
9)         else
10)        {
11)            System.out.println(x+" Hello DURGASOFT");
12)        }
13)    }
14) }
```

If x value is 9 then what is the output?

- A) 10 Hello India
- B) 10 Hello DURGASOFT
- C) 9 Hello India
- D) Compilation fails

Answer: 10 Hello India

Q6.Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int i =20;
6)         int j =30;
7)         int k = j += i/5;
8)         System.out.println(i+":"+j+":"+k);
9)     }
10) }
```




What is the output?

- A) 20:34:34
- B) 4:34:34
- C) 20:34:20
- D) 34:34:34

Answer: A

Q7. Consider the code

```
1) public class Test
2) {
3)     public static final int MIN=1;
4)     public static void main(String[] args)
5)     {
6)         int x = args.length;
7)         if(checkLimit(x))
8)         {
9)             System.out.println("OCJA");
10)        }
11)        else
12)        {
13)            System.out.println("OCJP");
14)        }
15)    }
16)    public static boolean checkLimit(int x)
17)    {
18)        return (x>=MIN) ? true : false;
19)    }
20) }
```

And given the commands as :

javac Test.java

java Test

What is the result ?

- A) OCJA
- B) OCJP
- C) Compilation Fails
- D) NullPointerException is thrown at runtime

Answer : B



Q8. Given Student class as

```
1) public class Student
2) {
3)     int rollno;
4)     String name;
5)     public Student(int rollno,String name)
6)     {
7)         this.rollno=rollno;
8)         this.name=name;
9)     }
10) }
```

Consider the code

```
1) Student s1= new Student(101,"Durga");
2) Student s2= new Student(101,"Durga");
3) Student s3= s1;
4) boolean b1= s1==s2;
5) boolean b2= s1.name.equals(s2.name);
6) System.out.println(b1+"."+b2);
```

What is the result?

- A) true:true
- B) true:false
- C) false:true
- D) false:false

Answer: C

Q9. Given the code

```
1) public class Test
2) {
3)     public static void main(String[] args) {
4)         String s1= "durga";
5)         String s2= new String("Durga");
6)         //line-1
7)         {
8)             System.out.println("Equal");
9)         }
10)        else
11)        {
12)            System.out.println("Not Equal");
13)        }
14)    }
15) }
```



Which code to be inserted at line-1 to print Equal

- A) String s3=s2;
if(s1==s3)
- B) if(s1.equalsIgnoreCase(s2))
- C) String s3=s2;
if(s1.equals(s3))
- D) if(s1.toLowerCase() == s2.toLowerCase())

Answer: B

Q10. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s1="Durga";
6)         String[] s2={"D","u","r","g","a"};
7)         String s3="";
8)         for(String s :s2)
9)         {
10)            s3=s3+s;
11)        }
12)        boolean b1= (s1==s3);
13)        boolean b2= (s1.equals(s3));
14)        System.out.println(b1+":"+b2);
15)    }
16) }
```

What is the output?

- A)true:true
- B)true:false
- C>false:true
- D>false:false

Answer: C



Q11. Consider the Test class

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         if(args[0].equals("Durga"?false:true)
6)         {
7)             System.out.println("Success");
8)         }
9)     else
10)    {
11)        System.out.println("Failure");
12)    }
13) }
14) }
```

javac Test.java
java Test Durga

What is the output?

- A) Success
- B) Failure
- C) Compilation fails
- D) Runtime Exception

Answer: B

Q12. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s="OCJA";
6)         String result=null;
7)         if(s.equals("JAVA"))
8)         {
9)             result="First Level";
10)        }
11)     else
12)     {
13)         result="Second Level";
14)     }
15)     System.out.println(result);
16)     result=s.equals("OCJA") ? "First Level" : "Second Level";
17)     System.out.println(result);
```



```
18) }  
19) }
```

What is the result?

- A) First Level
Second Level
- B) Second Level
First Level
- C) First Level
First Level
- D) Second Level
Second Level

Answer : B

Q13. Consider the code

```
1) String s="Color";  
2) String result=null;  
3) if(s.equals("Color"))  
4) {  
5)     result="Blue";  
6) }  
7) else if(s.equals("Wall"))  
8) {  
9)     result="Regular";  
10) }  
11) else  
12) {  
13)     result="No Result";  
14) }
```

Which code fragment can replace the if block?

- A) `s.equals("Color"?result="Blue":s.equals("Wall"?result="Regular" : result="No Result";`
- B) `result = s.equals("Color")?"Blue" else s.equals("Wall")? "Regular" : "No Result";`
- C) `result = s.equals("Color")? s.equals("Wall")? "Blue" : "Regular" : "No Result";`
- D) `result = s.equals("Color")? "Blue" : s.equals("Wall")? "Regular" : "No Result";`

Answer: D



Q14. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         double discount=0.0;
6)         int quantity=Integer.parseInt(args[0]);
7)         // Line-1
8)     }
9) }
```

And the given requirements:

If the value of the quantity variable is greater than or equal to 90, discount=20

If the value of the quantity variable is between 80 and 90 , discount=10

Which two code fragments can be independently placed at Line-1 to meet the requirements?

- A) if (quantity >= 90) { discount=20;}
 if (quantity > 80 && quantity < 90) { discount=10;}
- B) discount=(quantity >= 90) ? 20 : 0;
 discount=(quantity > 80) ? 10 : 0;
- C) discount = (quantity >= 90) ? 20 : (quantity > 80) ? 10 : 0;
- D)

```
1) if(quantity >= 80 && quantity <90)
2) {
3)     discount=10;
4) }
5) else
6) {
7)     discount=0;
8) }
9) if (quantity >= 90)
10) {
11)     discount=20;
12) }
13) else
14) {
15)     discount=0;
16) }
```

E) discount= (quantity>80) ? 10 :(quantity >=90)?20:0;

Answer : A and C



Topic-7: Flow-Control

Q1. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String stuff="X";
6)         String res=null;
7)         if(stuff.equals("X"))
8)         {
9)             res="A";
10)        }
11)        else if(stuff.equals("Y"))
12)        {
13)            res="B";
14)        }
15)        else
16)        {
17)            res="C";
18)        }
19)    }
20) }
```

Which of the following code can replace nested if-else?

- A) `res=stuff.equals("X") ? "A" : stuff.equals("Y") ? "B" : "C";`
- B) `res=stuff.equals("X") ? stuff.equals("Y") ? "A" : "B" : "C";`
- C) `res=stuff.equals("X") ? "A" else stuff.equals("Y") ? "B" : "C";`
- D) `res=stuff.equals("X") ? res="A" : stuff.equals("Y") ? "B" : "C";`

Answer: A

Q2. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         //line-1
6)         switch(x)
7)         {
8)             case 10:
9)                 System.out.println("Ten");
```



```
10)      break;
11)      case 20:
12)          System.out.println("Twenty");
13)          break;
14)      }
15)  }
16) }
```

Which 3 code fragments can be independently inserted at line-1 to print Ten

- A) byte x =10;
- B) short x =10;
- C) String x ="10";
- D) long x =10;
- E) double x =10;
- F) Integer x = new Integer(10);

Answer: A,B,F

Q3. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         boolean b = true;//line-1
6)         switch(b)
7)         {
8)             case true://line-2
9)                 System.out.print("True");
10)                break;
11)            default:
12)                System.out.print("default");
13)        }
14)        System.out.println("Done");
15)    }
16) }
```

Which of the following changes are required to print TrueDone?

- A) Replace line-1 with String b="true";
Replace line-2 with case "true";
- B) Replace line-1 with boolean b=1;
Replace line-2 with case 1;
- C) remove break statement
- D) remove the default section

Answer: A



Q4. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String color="Green";
6)         switch(color)
7)         {
8)             case "Red":
9)                 System.out.println("Red");
10)            case "Blue":
11)                System.out.println("Blue");
12)                break;
13)            case "Green":
14)                System.out.println("Green");
15)                break;
16)            default:
17)                System.out.println("Default");
18)        }
19)
20)    }
21) }
```

What is the output?

- A) Red
Blue
- B) Green
Default
- C) Default
- D) Green

Answer: D

Q5. Which of the following is true about switch statement?

- A) It should contain the default section
- B) The break statement, at the end of each case block is mandatory
- C) Its case label literals can be changed at runtime
- D) Its expression must evaluate a single value

Answer : D



Comparison:

1. If we don't know the number of iterations in advance then we should go for while loop.
2. If we want to execute loop body at least once then we should go for do-while loop.
3. If we know the number of iterations in advance then we should use for loop.
4. To retrieve the elements of arrays and collections then we should use for-each loop.

Q6. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int i = 5;
6)         while(isAvailable(i))
7)         {
8)             System.out.print(i); //Line-1
9)             //Line-2
10)        }
11)    }
12)    public static boolean isAvailable(int i)
13)    {
14)        return i-- > 0 ? true : false; // Line-3
15)    }
16) }
```

Which modification enables the code to print 54321

- A) Replace Line-1 with System.out.print(--i);
- B) At Line-2, insert i--;
- C) Replace Line-1 with --i; and , at Line-2 insert System.out.print(i);
- D) Replace Line-3 with return (i > 0) ? true : false;

Answer : B

Q7. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[] x = {1, 2, 3, 4};
6)         int i = 0;
7)         do
8)         {
```



```
9)      System.out.print(x[i]+" ");
10)     i++;
11)     }
12)     while (i<x.length -1);
13)     }
14) }
```

What is the output?

- A) 1 2 3 4
- B) 1 2 3
- C) Compilation Fails
- D) IndexOutOfBoundsException

Answer: B

Q8. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int x =5;
6)         do
7)         {
8)             System.out.print(x-- +" ");
9)         }
10)        while (x==0);
11)    }
12) }
```

What is the result?

- A) 5 4 3 2 1 0
- B) 5 4 3 2 1
- C) 4 2 1
- D) 5
- E) Nothing is printed

Answer: D



Q9. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[][] x = new int[2][4];
6)         x[0]= new int[]{2,4,6,8};
7)         x[1]= new int[]{2,4};
8)         for(int[] x1: x)
9)         {
10)            for(int x2 :x1)
11)            {
12)                System.out.print(x2+" ");
13)            }
14)            System.out.println();
15)        }
16)    }
17) }
```

What is the output?

- A) 2 4 6 8
2 4
- B) 2 4
2 4
- C) Compilation Fails
- D) ArrayIndexOutOfBoundsException

Answer: A

Q10. Consider the code

```
1) public class Student
2) {
3)     String name;
4)     public Student(String name)
5)     {
6)         this.name=name;
7)     }
8) }
9) public class Test
10) {
11)     public static void main(String[] args)
12)     {
13)         Student[] s = new Student[3];
14)         s[1]= new Student("Durga");
15)         s[2]= new Student("Ravi");
```



```
16)   for(Student s1: s)
17)   {
18)       System.out.println(s1.name);
19)   }
20) }
21) }
```

What is the output?

- A) Durga
Ravi
- B) Durga
Ravi
null
- C) Compilation Fails
- D) ArrayIndexOutOfBoundsException
- E) NullPointerException

Answer: E

Q11. Consider the code

```
1)   public class Test
2)   {
3)       public static void main(String[] args)
4)       {
5)           int[] data={10,20,30,40,50,30};
6)           int k= 30;
7)           int count=0;
8)           for(int x : data)
9)           {
10)              if( x!= k)
11)              {
12)                  continue;
13)                  count++;
14)              }
15)          }
16)          System.out.println(count);
17)      }
18) }
```



What is the result?

- A) 0
- B) 1
- C) 2
- D) Compilation Fails

Answer: D

Note: In the above code if we take count++; outside of if block then output is 2 (Option C).

Q12. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int wd = 0;
6)         String[] days={"sun","mon","wed","sat"};
7)         for(String s : days)
8)         {
9)             switch(s)
10)            {
11)                case "sat":
12)                case "sun":
13)                    wd -= 1;
14)                    break;
15)                case "mon":
16)                    wd++;
17)                case "wed":
18)                    wd += 2;
19)            }
20)        }
21)        System.out.println(wd);
22)    }
23) }
```

What is the output?

- A) 3
- B) 4
- C) -1
- D) Compilation Fails

Answer: A



Q13. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[] x= {1,2,3,4,5}
6)         for(yyy)
7)         {
8)             System.out.print(a[i]);
9)         }
10)    }
11) }
```

Which option can replace yyy to enable the code to print 135?

- A) int i=0;i<=4;i++
- B) int i=0;i<5;i+=2
- C) int i=1;i<=5;i++
- D) int i=1;i<5;i+=2

Answer: B

Q14. Consider the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String[][] colors=new String[2][2];
6)         colors[0][0]="red";
7)         colors[0][1]="blue";
8)         colors[1][0]="green";
9)         colors[1][1]="yellow";
10)    }
11) }
```

Which code fragment prints red:blue:green:yellow:?

A)

```
1) for(int i=1;i<2;i++)
2) {
3)     for(int j =1; j<2;j++)
4)     {
5)         System.out.print(colors[i][j]+":");
6)     }
7) }
```



B)

```
1) for(int i=0;i<2;++)
2) {
3)     for(int j =0; j<i;++j)
4)     {
5)         System.out.print(colors[i][j]+":");
6)     }
7) }
```

C)

```
1) for(String c: colors)
2) {
3)     for(String s: sizes )
4)     {
5)         System.out.print(s+":");
6)     }
7) }
```

D)

```
1) for(int i=0;i<2;)
2) {
3)     for(int j =0; j<2;)
4)     {
5)         System.out.print(colors[i][j]+":");
6)         j++;
7)     }
8)     i++;
9) }
```

Q15. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[] s={10,20,30};
6)         int size=3;
7)         int i =0;
8)         /* Line-1 */
9)         System.out.println("The Top Element:" + s[i]);
10)    }
11) }
```




Which code fragment inserted at line-1 ,prints The Top Element:30 ?

A)

```
1) do
2) {
3)   i++;
4) }
5) while ( i >= size );
```

B)

```
1) while(i < size)
2) {
3)   i++;
4) }
```

C)

```
1) do
2) {
3)   i++;
4) }
5) while (i < size-1);
```

D)

```
1) do
2) {
3)   i++;
4) }
5) while (i <= size);
```

E)

```
1) while(i <= size-1)
2) {
3)   i++;
4) }
```

Answer: C



Q16. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int n[];
6)         n= new int[2];
7)         n[0]=100;
8)         n[1]=200;
9)
10)        n = new int[4];
11)        n[2]=300;
12)        n[3]=400;
13)
14)        for(int x : n)
15)        {
16)            System.out.print(" "+x);
17)        }
18)    }
19) }
```

What is the result?

- A) 100 200 300 400
- B) 0 0 300 400
- C) Compilation Fails
- D) An exception thrown at runtime

Answer : B

Q17. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int[][] n= {{1,2},{3,4}};
6)         for(int i =n.length-1;i>=0;i--)
7)         {
8)             for(int x:n[i])
9)             {
10)                System.out.print(x);
11)            }
12)        }
13)    }
14) }
```



What is the result?

- A) 1234
- B) 3412
- C) 4321
- D) 2143

Answer : B

Q18. Given the code fragment:

`int[] x = {10,20,30,40};`

And the given requirements:

1. Process all the elements of the array in the order of entry.
2. Process all the elements of the array in the reverse order of entry.
3. Process alternating elements of the array in the order of entry.

Which two statements are true?

- A) Requirements 1,2 and 3 can be implemented by using the enhanced for loop
- B) Requirements 1,2 and 3 can be implemented by using the standard for loop
- C) Requirements 2 and 3 CANNOT be implemented by using the standard for loop
- D) Requirement 1 can be implemented by using the enhanced for loop
- E) Requirement 3 CANNOT be implemented by using either the enhanced for loop or the standard for loop.

Answer: B,D

Q19. Given the following array:

`int[] x = {10,20,30,40,50};`

Which two code fragments independently print each element of this array?

A)

```
1) for(int i : x)
2) {
3)     System.out.print(x[i]+" ");
4) }
```

B)

```
1) for(int i : x)
2) {
3)     System.out.print(i+" ");
4) }
```



C)

```
1) for(int i=0 : x)
2) {
3)   System.out.print(x[i]+" ");
4)   i++;
5) }
```

D)

```
1) for(int i=0 ; i < x.length; i++)
2) {
3)   System.out.print(i+" ");
4) }
```

E)

```
1) for(int i=0 ; i < x.length; i++)
2) {
3)   System.out.print(x[i]+" ");
4) }
```

F)

```
1) for(int i=1 ; i < x.length; i++)
2) {
3)   System.out.print(x[i]+" ");
4) }
```

Answer : B and E

Explanation:

Standard for loop is index based where as Enhanced for loop is Element based.

Q20. Consider the code

```
1) public class Test
2) {
3)   public static void main(String[] args)
4)   {
5)     String[] s={"A","B","C","D"};
6)     for(int i =0; i<s.length;i++)
7)     {
8)       System.out.print(s[i]+" ");
9)       if (s[i].equals("C"))
10)      {
11)        continue;
```



```
12)    }  
13)    System.out.println("Done");  
14)    break;  
15)    }  
16)    }  
17) }
```

What is the result?

- A) A B C D Done
- B) A B C Done
- C) A Done
- D) Compilation fails

Answer : C

Q21. Consider the code

```
1) public class Test  
2) {  
3)     public static void main(String[] args)  
4)     {  
5)         String[][] s={{ "A", "B", "C"}, {"D", "E"}};  
6)         for(int i =0; i<s.length;i++)  
7)         {  
8)             for(int j =0; j<s[i].length;j++)  
9)             {  
10)                System.out.print(s[i][j]+" ");  
11)                if(s[i][j].equals("B"))  
12)                {  
13)                    break;  
14)                }  
15)            }  
16)            continue;  
17)        }  
18)    }  
19) }
```

What is the result?

- A) A B C D E
- B) A B C
- C) A B D E
- D) Compilation fails

Answer : C



Q22. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         int i = 0;
6)         int j = 7;
7)         for( i = 0; i < j-1 ; i= i+2)
8)         {
9)             System.out.print(i+" ");
10)        }
11)
12)    }
13) }
```

What is the result?

- A) 0 2 4 6
- B) 0 2 4
- C) 2 4 6
- D) Compilation fails

Answer : B

Q23. Consider the following code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String[][] s= new String[2][];
6)         s[0] = new String[2];
7)         s[1] = new String[5];
8)         int i =97;
9)
10)        for(int a =0;a < s.length; a++)
11)        {
12)            for(int b =0; b< s.length; b++)
13)            {
14)                s[a][b]=""+i;
15)                i++;
16)            }
17)        }
18)        for( String[] s1: s)
19)        {
20)            for (String s2 : s1)
```



```
21)    {  
22)        System.out.print(s2+" ");  
23)    }  
24)        System.out.println();  
25)    }  
26) }  
27) }
```

What is the result ?

- A) 97 98
99 100 null null null
- B) 97 98
99 100 101 102 103
- C) Compilation fails
- D) NullPointerException is thrown at Runtime
- E) ArrayIndexOutOfBoundsException is thrown at Runtime

Q24. Consider the following code

```
1) public class Test  
2) {  
3)     public static void main(String[] args)  
4)     {  
5)         int[][] x = new int[2][4];  
6)         x[0] = new int[]{1,2,3,4};  
7)         x[1] = new int[]{1,2};  
8)  
9)         for(int[] x1 : x)  
10)        {  
11)            for(int x2 : x1)  
12)            {  
13)                System.out.print(x2+" ");  
14)            }  
15)            System.out.println();  
16)        }  
17)    }  
18) }
```



What is the result?

A) 1 2 3 4

1 2

B) 1 2

1 2

C) Compilation fails

D) `ArrayIndexOutOfBoundsException` is thrown at runtime

Answer : A



Topic-8: Declarations and Access Modifiers

Part-1: Import statement and packages

Part-2: Access Modifiers (public,private,protected and default)

part-3: abstract modifier and interfaces

Q1. Given the code fragment from 3 files

SalesMan.java:

```
package sales;  
public class SalesMan{}
```

Product.java:

```
package sales.products;  
public class Product{}
```

Market.java:

```
1) package market;  
2) //Line-1  
3) public class Market  
4) {  
5)     SalesMan sm;  
6)     Product p;  
7) }
```

Which code fragment when inserted at line 2, enables the code to compile?

- A) import sales.*;
- B) import java.sales.products.*;
- C) import sales;
import sales.products;
- D) import sales.*;
import products.*;
- E) import sales.*;
import sales.products.*;

Answer : E

Note: Whenever we are importing a package, all classes and interfaces present in that package are by default available but not sub package classes. Hence to use sub package class, compulsory we should write import statement until sub package level.



Q2. Consider the code

```
1) package pack1;
2) public class A
3) {
4)     int p;
5)     private int q;
6)     protected int r;
7)     public int s;
8) }
```

Test.java:

```
1) package pack2;
2) import p1.A;
3) public class Test extends A
4) {
5)     public static void main(String[] args)
6)     {
7)         A obj= new Test();
8)     }
9) }
```

Which statement is true?

- A) By using obj we can access p and s
- B) By using obj we can access only s
- C) By using obj we can access r and s
- D) By using obj we can access p,r and s

Answer: B

Q3. Which of the following code fragments are valid?

A)

```
1) public abstract class Test
2) {
3)     public void m1();
4)     public void m2();
5) }
```

B)

```
1) public abstract class Test
2) {
3)     public abstract void m1();
4)     public void m2();
5) }
```



C)

```
1) public abstract class Test
2) {
3)     public abstract void m1();
4)     public void m2(){}
5) }
```

D)

```
1) public abstract class Test
2) {
3)     public abstract void m1(){}
4)     public abstract void m2(){}
5) }
```

Answer: C

Q4. You are asked to develop a program for a shopping application, and you are given the following information:

The application must contains the classes Book,JavaBook and PythonBook. The Book class is the super class of other 2 classes.

The int calculatePrice(Book b) method calculates the price of the Book.

The void printBook(Book b) method prints the details of the Book.

Which definition of the Book class adds a valid layer of abstraction to the class hierarchy?

A)

```
1) public abstract class Book
2) {
3)     public abstract int calculatePrice(Book b);
4)     public void printBook(Book b){}
5) }
```

B)

```
1) public abstract class Book
2) {
3)     public int calculatePrice(Book b);
4)     public void printBook(Book b);
5) }
```



C)

```
1) public abstract class Book
2) {
3)     public int calculatePrice(Book b);
4)     public final void printBook(Book b){}
5) }
```

D)

```
1) public abstract class Book
2) {
3)     public abstract int calculatePrice(Book b){}
4)     public abstract void printBook(Book b){}
5) }
```

Answer: A

Q5. Consider the code

```
1) interface Interf
2) {
3)     public void m1();
4)     public void m2();
5) }
6) class A implements Interf
7) {
8)     public void m1(){}
9) }
```

Which of the following changes individually will compile the code successfully?

- A) insert public void m2(){} inside class A
- B) declare class A as abstract
- C) insert public void m2(); inside class A
- D) No Changes are required

Answer: A and B

Q6. Consider the code

```
1) interface Writable
2) {
3)     public void writeBook();
4)     public void setBookMark();
5) }
6) abstract class Book implements Writable //Line-1
7) {
```



```
8) public void writeBook(){  
9) //Line-2  
10) }  
11) class EBook extends Book //Line-3  
12) {  
13) public void writeBook(){  
14) //Line-4  
15) }
```

And given the code Fragment:

```
Book b1= new EBook();  
b1.writeBook();
```

Which option enables the code to compile?

- A) Replace the code fragment at Line-3 with :
abstract class EBook extends Book
- B) Replace the code fragment at Line-1 with :
class Book implements Writable
- C) At Line-2 insert
public abstract void setBookMark();
- D) At Line-4 insert:
public void setBookMark(){}

Answer : D

Q7. Given the content of 3 files

X.java:

```
1) public class X  
2) {  
3) public void a(){}  
4) int a;  
5) }
```

Y.java:

```
1) public class Y  
2) {  
3) private int doStuff()  
4) {  
5) private int i =100;  
6) return i++;
```



```
7) }  
8) }
```

Z.java:

```
1) import java.io.*;  
2) package pack1;  
3) class Z  
4) {  
5)     public static void main(String[] args) throws IOException  
6)     {  
7)     }  
8) }
```

Which Statement is true?

- A) Only X.java file compiles successfully
- B) Only Y.java file compiles successfully
- C) Only Z.java file compiles successfully
- D) Only X.java and Y.java files compile successfully
- E) Only Y.java and Z.java files compile successfully
- F) Only X.java and Z.java files compile successfully

Answer: A

Q8. Given the code fragments:

A.java:

```
1) package pack1;  
2) public class A  
3) {  
4) }
```

B.java:

```
1) package pack1.pack2;  
2) //Line-1  
3) public class B  
4) {  
5)     public void m1()  
6)     {  
7)         A a = new A();  
8)     }  
9) }
```



C.java:

```
1) package pack3;  
2) //Line-2  
3) public class C  
4) {  
5)     public static void main(String[] args)  
6)     {  
7)         A a = new A();  
8)         B b = new B();  
9)     }  
10) }
```

Which modifications enables the code to compile?

A) Replace Line-1 with:
import pack1.A;

Replace Line-2 with:
import pack1.A;
import pack1.pack2.B;

B) Replace Line-1 with:
import pack1;

Replace Line-2 with:
import pack1;
import pack1.pack2;

C) Replace Line-1 with:
import pack1.A;

Replace Line-2 with:
import pack1.*;

D) Replace Line-1 with:
import pack1.*;

Replace Line-2 with:
import pack1.pack2.*;

Answer: A



Topic-9: OOPs

Exam Objectives:

1. Compare and contrast the features and components of Java such as: object orientation, encapsulation, etc.
2. Describe inheritance and its benefits
3. Create methods with arguments and return values; including overloaded methods
4. Apply encapsulation principles to a class
5. Develop code that makes use of polymorphism; develop code that overrides methods; differentiate between the type of a reference and the type of an object
6. Create and overload constructors; differentiate between default and user defined constructors
7. Use super and this to access objects and constructors
8. Determine when casting is necessary

Q1. Which three statements describe the object oriented features of the java language?

- A. Objects cannot be reused
- B. A sub class can inherit from a super class
- C. Objects can share behaviours with other objects
- D. A package must contains more than one class
- E. Object is the root class of all other objects
- F. A main method must be declared in every class

Answer: B,C,E

Q2. What is the name of the Java concept that uses access modifiers to protect variables and hide them within a class?

- A. Encapsulation
- B. Inheritance
- C. Abstraction
- D. Instantiation
- E. Polymorphism

Ans: A

Explanation: This concept is data hiding, but that option is not available and hence we can choose encapsulation



Q3. Which statement best describes encapsulation?

- A. Encapsulation ensures that classes can be designed so that only certain fields and methods of an object are accessible from other objects
- B. Encapsulation ensures that classes can be designed so that their methods are inheritable
- C. Encapsulation ensures that classes can be designed with some fields and methods declared as abstract.
- D. Encapsulation ensures that classes can be designed so that if a method has an argument X, any subclass of X can be passed to that method.

Answer: A

Q4. Given the following two classes:

```
1) public class Customer
2) {
3)     ElectricAccount acct=new ElectricAccount();
4)     public void useElectricity(double kwh)
5)     {
6)         acct.addKwh(kwh);
7)     }
8) }
9) public class ElectricAccount
10) {
11)     private double kwh;
12)     public double rate=0.09;
13)     private double bill;
14)     //Line-1
15) }
```

How should you write methods in ElectricAccount class at Line-1 so that the member variable bill is always equal to the value of the member variable kwh multiplied by the member variable rate?

Any amount of electricity used by Customer (represented by an instance of the Customer class) must contribute to the Customer's bill (represented by member variable bill) through the method useElectricity() method. An instance of the customer class should never be able to tamper with or decrease the value of the member variable bill?

A.

```
1) public void addKwh(double kwh)
2) {
3)     this.kwh+=kwh;
4)     this.bill=this.kwh*this.rate;
5) }
```



B.

```
1) public void addKwh(double kwh)
2) {
3)     if(kwh>0)
4)     {
5)         this.kwh+=kwh;
6)         this.bill=this.kwh*this.rate;
7)     }
8) }
```

C.

```
1) private void addKwh(double kwh)
2) {
3)     if(kwh>0)
4)     {
5)         this.kwh+=kwh;
6)         this.bill=this.kwh*this.rate;
7)     }
8) }
```

D.

```
1) public void addKwh(double kwh)
2) {
3)     if(kwh>0)
4)     {
5)         this.kwh+=kwh;
6)         setBill(this.kwh)
7)     }
8) }
9) public void setBill(double kwh)
10) {
11)     bill=kwh*rate;
12) }
```

Answer: C

Explanation:

Any amount of electricity used by Customer (represented by an instance of the Customer class) must contribute to the Customer's bill (represented by member variable bill) through the method useElectricity() method.

Means no one is allowed to call addKwh() method directly, should be private



An instance of the customer class should never be able to tamper with or decrease the value of the member variable bill

If we pass -ve value for kwh then we can decrease the bill. To prevent this we should check kwh>0

Q5. Given the following code fragment:

```
1) public class Rectangle
2) {
3)     private double length;
4)     private double height;
5)     private double area;
6)     public void setLength(double length)
7)     {
8)         this.length=length;
9)     }
10)    public void setHeight(double height)
11)    {
12)        this.height=height;
13)    }
14)    public void setArea()
15)    {
16)        area=length*height;
17)    }
18) }
```

Which two changes would encapsulation this class and ensure that the area field is always equal to length*height, whenever Rectangle class is used?

- A. Change the area field to public
- B. Change the setArea() method to private?
- C. Call the setArea() method at the beginning of the setLength() method
- D. Call the setArea() method at the end of the setLength() method
- E. Call the setArea() method at the beginning of the setHeight() method
- F. Call the setArea() method at the end of the setHeight() method

Answer: B,F

Q6. Given the following classes:

```
1) public class Employee
2) {
3)     public int salary;
4) }
5) public class Manager extends Employee
6) {
7)     public int budget;
8) }
9) public class Director extends Manager
```



```
10) {  
11)     public int stockOptions;  
12) }
```

And given the following main method:

```
1)     public static void main(String[] args)  
2)     {  
3)         Employee e = new Employee();  
4)         Manager m = new Manager();  
5)         Director d = new Director();  
6)         //Line 1  
7)     }
```

Which two options fail to compile when placed at Line 1 of the main method?

- A. e.salary=50_000;
- B. d.salary=80_000;
- C. e.budget=2_00_000;
- D. m.budget=1_00_000;
- E. m.stockOption=500;
- F. d.stockOption=1_000;

Answer: C and E

Q7.Given the code fragment:

```
1)     abstract class Parent  
2)     {  
3)         protected void resolve();//Line-1  
4)         {  
5)         }  
6)         abstract void rotate();//Line-2  
7)     }  
8)     class Child extends Parent  
9)     {  
10)        void resolve();//Line-3  
11)        {  
12)        }  
13)        protected void rotate();//Line-4  
14)        {  
15)        }  
16)    }
```



Which two modifications, made independently, enable the code to compile?

- A. Make that method at Line-1 public
- B. Make that method at Line-2 public
- C. Make that method at Line-3 public
- D. Make that method at Line-3 protected
- E. Make that method at Line-4 public

Answer: C,D

Explanation: While overriding, we cannot reduce the scope of access modifier, but we can increase the scope

Q8. Given:

Base.java:

```
1) class Base
2) {
3)     public void test()
4)     {
5)         System.out.println("Base");
6)     }
7) }
```

DerivedA.java:

```
1) class DerivedA extends Base
2) {
3)     public void test()
4)     {
5)         System.out.println("DerivedA");
6)     }
7) }
```

DerivedB.java

```
1) class DerivedB extends DerivedA
2) {
3)     public void test()
4)     {
5)         System.out.println("DerivedB");
6)     }
7)     public static void main(String[] args)
8)     {
9)         Base b1= new DerivedB();
10)        Base b2= new DerivedA();
11)        Base b3= new DerivedB();
```



```
12)    b1=(Base)b3;  
13)    Base b4=(DerivedA)b3;  
14)    b1.test();  
15)    b4.test();  
16)    }  
17)  
18) }
```

What is the result?

- A. Base
DerivedA
- B. Base
DerivedB
- C. DerivedB
DerivedB
- D. DerivedB
DerivedA
- E. A ClassCastException is thrown at runtime

Answer: C

Q9. Which two are benefits of polymorphism?

- A. Faster Code at Runtime
- B. More efficient Code at Runtime
- C. More Dynamic Code at Runtime
- D. More Flexible and Reusable Code at Runtime
- E. Code that is protected from extension by other classes

Answer: C,D

Q10. Which three statements are true about the structure of a Java class?

- A) public class should compulsory contains main method
- B) A class can have only one private constructor
- C) A method can have the same name as variable
- D) A class can have overloaded static methods
- E) The methods are mandatory components of a class
- F) The fields need not be initialized before use.

Answer: C, D,F



Q11. Given:

```
1) class A
2) {
3)     public void test()
4)     {
5)         System.out.print("A");
6)     }
7) }
8) class B extends A
9) {
10)    public void test()
11)    {
12)        System.out.print("B");
13)    }
14) }
15) public class C extends A
16) {
17)    public void test()
18)    {
19)        System.out.print("C");
20)    }
21)    public static void main(String[] args)
22)    {
23)        A a1 = new A();
24)        A a2 = new B();
25)        A a3 = new C();
26)        a1.test();
27)        a2.test();
28)        a3.test();
29)    }
30) }
```

What is the output?

- A. AAA
- B. ABC
- C. AAB
- D. ABA

Ans: B



Q12. Given:

```
1) public class Test
2) {
3)     public static void sum(Integer x,Integer y)
4)     {
5)         System.out.println("Integer sum is:"+(x+y));
6)     }
7)     public static void sum(double x,double y)
8)     {
9)         System.out.println("double sum is:"+(x+y));
10)    }
11)    public static void sum(float x,float y)
12)    {
13)        System.out.println("float sum is:"+(x+y));
14)    }
15)    public static void sum(int x,int y)
16)    {
17)        System.out.println("int sum is:"+(x+y));
18)    }
19)    public static void main(String[] args)
20)    {
21)        sum(10,20);
22)        sum(10.0,20.0);
23)    }
24) }
```

What is the result?

- A. int sum is:30
double sum is:30.0
- B. int sum is:30
float sum is:30.0
- C. Integer sum is:30
double sum is:30.0
- D. Integer sum is:30
float sum is:30.0

Answer: A



Q13. Given the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         Short s1=200;
6)         Integer s2=400;
7)         Long s3=(long)s1+s2; //Line-1
8)         String s4=(String)(s3*s2);// Line-2
9)         System.out.println(s3);
10)    }
11) }
```

What is the result?

- A. 600
- B. Compilation Fails at Line-1
- C. Compilation Fails at Line-2
- D. A ClassCastException is thrown at Line-1
- E. A ClassCastException is thrown at Line-2

Answer: C



Topic-10: Constructors

Q1. Given:

```
1) class Vehicle
2) {
3)     String type="4w";
4)     int maxSpeed=120;
5)     Vehicle(String type,int maxSpeed)
6)     {
7)         this.type=type;
8)         this.maxSpeed=maxSpeed;
9)     }
10) }
11) class Car extends Vehicle
12) {
13)     String trans;
14)     Car(String trans)
15)     {
16)         //Line-1
17)         this.trans=trans;
18)     }
19)     Car(String type,int maxSpeed,String trans)
20)     {
21)         super(type,maxSpeed);
22)         this(trans);//Line-2
23)     }
24) }
```

And given the code fragment:

```
1) Car c1= new Car("Auto");
2) Car c2= new Car("4w",150,"Manual");
3) System.out.println(c1.type+".." +c1.maxSpeed+".." +c1.trans);
4) System.out.println(c2.type+".." +c2.maxSpeed+".." +c2.trans);
```

What is the result?

- A. 4w 120 Auto
4w 150 Manual
- B. null 0 Auto
4w 150 Manual



- C. Compilatio Fails only at Line-1
- D. Compilatio Fails only at Line-2
- E. Compilatio Fails at both Line-1 and Line-2

Answer: E

Q2. Given:

```
1) class CD
2) {
3)     int r;
4)     CD(int r)
5)     {
6)         this.r=r;
7)     }
8) }
9) class DVD extends CD
10) {
11)     int c;
12)     DVD(int r, int c)
13)     {
14)         //line-1
15)     }
16) }
```

And Given the code Fragment:

DVD dvd = new DVD(10,20);

Which code fragment should be inserted at Line-1 to instantiate dvd object successfully?

- A) super.r=r;
this.c=c;
- B) super(r);
this(c);
- C) super(r);
this.c=c;
- D) this.c=r;
super(c)

Answer: C



Q3. Given the code Fragment:

```
1) public class Employee
2) {
3)     String name;
4)     boolean contract;
5)     double salary;
6)     Employee()
7)     {
8)         //line-1
9)     }
10)    public String toString()
11)    {
12)        return name+":"+contract+":"+salary;
13)    }
14)    public static void main(String[] args)
15)    {
16)        Employee e = new Employee();
17)        //Line-2
18)        System.out.println(e);
19)    }
20) }
```

Which 2 modifications,when made independently,enable to the code to print Durga:true:100.0

- A) Replace line-2 with
e.name="Durga";
e.contract=true;
e.salary=100;
- B) Replace line-2 with
this.name="Durga";
this.contract=true;
this.salary=100;
- C) Replace line-1 with
this.name=new String("Durga");
this.contract= new Boolean(true);
this.salary= new Double(100);
- D) Replace line-1 with
name="Durga";
contract=TRUE;
salary=100.0f;
- E) Replace line-1 with:
this("Durga",true,100)

Answer: A and C



Q4. Given:

```
1) class A
2) {
3)     public A()
4)     {
5)         System.out.println("A");
6)     }
7) }
8) class B extends A
9) {
10)    public B()
11)    {
12)        //line-1
13)        System.out.println("B");
14)    }
15) }
16) class C extends B
17) {
18)    public C()
19)    {
20)        //line-2
21)        System.out.println("C");
22)    }
23)    public static void main(String[] args)
24)    {
25)        C c = new C();
26)    }
27) }
```

What is the Result?

- A) CBA
- B) C
- C) ABC
- D) Compilation Fails at line-1 and line-2

Answer: C



Q5. Given

```
1) class Vehicle
2) {
3)     int x;
4)     Vehicle()
5)     {
6)         this(10); // line-1
7)     }
8)     Vehicle(int x)
9)     {
10)        this.x=x;
11)    }
12) }
13) class Car extends Vehicle
14) {
15)     int y;
16)     Car()
17)     {
18)         super();
19)         this(20); // line-2
20)     }
21)     Car(int y)
22)     {
23)         this.y= y;
24)     }
25)     public String toString()
26)     {
27)         return super.x+":"+this.y;
28)     }
29) }
```

And given the code fragment:

```
1) Vehicle v= new Car();
2) System.out.println(v);
```

What is the result?

- A. 10:20
- A. 0:20
- C. Compilation Fails at Line-1
- D. Compilation Fails at Line-2

Answer: D



Q6. Given the code fragment:

```
1) public class Person
2) {
3)     String name;
4)     int age=25;
5)     public Person(String name)
6)     {
7)         this(); //line-1
8)         setName(name);
9)     }
10)    public Person(String name,int age)
11)    {
12)        Person(name);//Line-2
13)        setAge(age);
14)    }
15)    //setter and getter methods go here
16)    public String show()
17)    {
18)        return name+" "+age+" "+number;
19)    }
20)    public static void main(String[] args)
21)    {
22)        Person p1= new Person("Durga");
23)        Person p2= new Person("Ravi",50);
24)        System.out.println(p1.show());
25)        System.out.println(p2.show());
26)    }
27) }
```

What is the result?

- A. Durga 25
Ravi 50
- B. Compilation fails at Line-1
- C. Compilation fails at Line-2
- D. Compilation Fails at both line-1 and line-2

Answer: D



Q7. Given:

```
1) class Animal
2) {
3)     String type="Canine";
4)     int maxSpeed=60;
5)     Animal(){}
6)     Animal(String type,int maxSpeed)
7)     {
8)         this.type=type;
9)         this.maxSpeed=maxSpeed;
10)    }
11) }
12) class WildAnimal extends Animal
13) {
14)     String bounds;
15)     WildAnimal(String bounds)
16)     {
17)         //line-1
18)     }
19)     WildAnimal(String type,int maxSpeed,String bounds)
20)     {
21)         //line-2
22)     }
23) }
```

And the code fragment:

```
1) WildAnimal wolf= new WildAnimal("Long");
2) WildAnimal tiger= new WildAnimal("Feline",80,"Short");
3) System.out.println(wolf.type+" "+wolf.maxSpeed+" "+wolf.bounds);
4) System.out.println(tiger.type+" "+tiger.maxSpeed+" "+tiger.bounds);
```

Which 2 modifications enable to the code to print the following output?

Canine 60 Long
Feline 80 Short

- A) Replace line-1 with
 super();
 this.bounds=bounds;
- B) Replace line-1 with
 this.bounds=bounds;
 super();



- C) Replace line-2 with
super(type,maxSpeed);
this(bounds);
- D) Repalce line-1 with
this("Canine",60);
this.bounds=bounds;
- E) Replace line-2 with
super(type, maxSpeed);
this.bounds=bounds;

Answer: A and E

Q8.

```
1) class Employee
2) {
3)     private String name;
4)     private int age;
5)     private int salary;
6)
7)     public Employee(String name,int age)
8)     {
9)         setName(name);
10)        setAge(age);
11)        setSalary(2000);
12)    }
13)    public Employee(String name,int age,int salary)
14)    {
15)        setSalary(salary);
16)        this(name,age);
17)    }
18)    //getter and setter methods goes here
19)    public void printDetails()
20)    {
21)        System.out.println(name+":"+age+":"+salary);
22)    }
23) }
```



Test.java:

```
1) class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         Employee e1= new Employee();
6)         Employee e2= new Employee("Durga",50);
7)         Employee e3= new Employee("Ravi",40,5000);
8)         e1.printDetails();
9)         e2.printDetails();
10)        e3.printDetails();
11)    }
12) }
```

What is the result?

- A) Compilation fails in the Employee class
- B) null:0:0
Durga:50:0
Ravi:40:5000
- C) null:0:0
Durga:50:2000
Ravi:40:5000
- D) Compilation Fails in the Test class
- E) Compilation Fails in both Test and Employee classes

Answer: E

Q9. Given the following class:

```
1) public class CheckingAccount
2) {
3)     public int amount;
4)     //line-1
5) }
```

And the given the following main method located in another class:

```
1) public static void main(String[] args)
2) {
3)     CheckingAccount acct= new CheckingAccount();
4)     //line-2
5) }
```



Which 3 pieces of code inserted independently, set the value of amount to 100?

A. At line-2 insert:

amount=100;

B. At line-2 insert:

this.amount=100;

C. At line-2 insert:

acct.amount=100;

D. At line-1 insert:

```
1) public CheckingAccount()  
2) {  
3)     amount=100;  
4) }
```

E. At line-1 insert:

```
1) public CheckingAccount()  
2) {  
3)     this.amount=100;  
4) }
```

F. At line-1 insert:

```
1) public CheckingAccount()  
2) {  
3)     acct.amount=100;  
4) }
```

Answers: C,D and E



Topic-11: Exception Handling

Q1. Given the code fragment:

```
1) class X
2) {
3)     public void printFileContent()
4)     {
5)         //Line-1
6)         throw new IOException();//Line-2
7)     }
8) }
9) public class Test
10) {
11)     public static void main(String[] args)//Line-3
12)     {
13)         X x= new X();
14)         x.printFileContent();//Line-4
15)         //Line-5
16)     }
17) }
```

Which two modifications required to compile code successfully?

- A. Replace Line-3 with public static void main(String[] args) throws Exception
- B. Replace Line-4 with:

```
1) try
2) {
3)     x.printFileContent();
4) }
5) catch (Exception e) {}
6) catch (IOException e) {}
```

- C. Replace Line-3 with public static void main(String[] args) throws IOException
- D. Replace Line-2 with throw IOException("Exception Raised");
- E. At Line-5 insert throw new IOException();

Answer: A, C



Q2. Given the code Fragment:

```
1) public class Test
2) {
3)     void readCard(int cno) throws Exception
4)     {
5)         System.out.println("Reading Card");
6)     }
7)     void checkCard(int cno) throws RuntimeException//Line-1
8)     {
9)         System.out.println("Checking Card");
10)    }
11)    public static void main(String[] args)
12)    {
13)        Test t = new Test();
14)        int cardNo=1234;
15)        t.checkCard(cardNo);//Line-2
16)        t.readCard(cardNo);//Line-3
17)    }
18) }
```

What is the result?

- A) Checking Card
Reading Card
- B) Compilation Fails at Line-1
- C) Compilation Fails at Line-2
- D) Compilation Fails at Line-3
- E) Compilation Fails at Line-2 and Line-3

Answer: D

Q3. Given the following code for the classes MyException and Test:

```
1) public class MyException extends RuntimeException
2) {
3) }
4)
5) public class Test
6) {
7)     public static void main(String[] args)
8)     {
9)         try
10)        {
11)            m1();
12)        }
13)        catch (MyException e)
```



```
14) {  
15)     System.out.print("A");  
16) }  
17) }  
18) public static void m1()  
19) {  
20)     try  
21)     {  
22)         throw Math.random() > 0.5 ? new Exception():new MyException();  
23)     }  
24)     catch (RuntimeException e)  
25)     {  
26)         System.out.println("B");  
27)     }  
28) }  
29) }
```

What is the result?

- A) A
- B) B
- C) Either A or B
- D) AB
- E) Compilation Fails

Answer: E

Q4. Given the code fragment:

```
1) String[] s= new String[2];  
2) int i=0;  
3) for(String s1: s)  
4) {  
5)     s[i].concat("element"+i);  
6)     i++;  
7) }  
8) for(i=0; i<s.length;i++)  
9) {  
10)     System.out.println(s[i]);  
11) }
```

What is the result?

- A) element 0
element 1
- B) null element 0
null element 1



- C) null
null
- D) A NullPointerException is thrown at runtime

Answer: D

Q5. Given the code fragment:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String[] names={"Thomas","Bunny","Chinny"};
6)         String[] pwds=new String[3];
7)         int i =0;
8)         try
9)         {
10)            for (String n: names)
11)            {
12)                pwds[i]=n.substring(2,6);
13)                i++;
14)            }
15)        }
16)        catch (Exception e)
17)        {
18)            System.out.println("Invalid Name");
19)        }
20)        for(String p: pwds)
21)        {
22)            System.out.println(p);
23)        }
24)    }
25) }
```

What is the result?

- A) Invalid Name
omas
null
null
- B) Invalid Name
- C) Invalid Name
omas
- D) Compilation Fails

Answer: A



Q6. Given the code fragment:

```
1) import java.util.*;
2) public class Test
3) {
4)     public static void main(String[] args)
5)     {
6)         ArrayList l = new ArrayList();
7)         String[] s;
8)         try
9)         {
10)            while(true)
11)            {
12)                l.add("MyString");
13)            }
14)        }
15)        catch (RuntimeException e)
16)        {
17)            System.out.println("Caught a RuntimeException");
18)        }
19)        catch (Exception e)
20)        {
21)            System.out.println("Caught an Exception");
22)        }
23)        System.out.println("Ready to use");
24)    }
25) }
```

What is the result?

- A. Caught a RuntimeException printed to the console
- B. Caught an Exception printed to the console
- C. A runtime error is thrown at runtime
- D. Ready to use printed to the console
- E. The code fails to compile because a throws keyword required

Answer: C

Q7. Which three are advantages of the Java Exception Mechanism?

- A. Improves the program structure because the error handling code is separated from the normal program function.
- B. Provides a set of standard exceptions that covers all possible errors
- C. Improves the program structure beacuse the programmer can choose where to handle exceptions



D. Improves the program structure because exceptions must be handled in the method in which they occurred.

E. Allows the creation of new exceptions that are tailored to the particular program being created.

Answer: A, C, E

Q8. Which 3 statements are true about exception handling?

- A. Only unchecked exceptions can be rethrown
- B. All Subclasses of the RuntimeException are recoverable
- C. The parameter in catch block is of throwable type
- D. All subclasses of RuntimeException must be caught or declared to be thrown
- E. All Subclasses of the Exception except RuntimeException class are checked exceptions
- F. All subclasses of the Error class are checked exceptions and are recoverable

Answer: B, C, E

Q9. Which two statements are true?

- A. Error class is unextendable
- B. Error class is extendable
- C. Error is a RuntimeException
- D. Error is an Exception
- E. Error is a Throwable

Ans: B, E



Topic-12: String and StringBuilder

Q1. Given the code fragment:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         StringBuilder sb=new StringBuilder(5);
6)         String s="";
7)         if(sb.equals(s))
8)         {
9)             System.out.println("Match 1");
10)        }
11)        else if(sb.toString().equals(s.toString()))
12)        {
13)            System.out.println("Match 2");
14)        }
15)        else
16)        {
17)            System.out.println("No Match");
18)        }
19)    }
20) }
```

What is the result?

- A. Match 1
- B. Match 2
- C. No Match
- D. NullPointerException is thrown at runtime

Answer: B

Q2. Given:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String ta="A";
6)         ta=ta.concat("B");
7)         String tb="C";
8)         ta=ta.concat(tb);
9)         ta.replace('C','D');
10)        ta=ta.concat(tb);
```



```
11) System.out.println(ta);
12) }
13) }
```

What is the result?

- A. ABCD
- B. ACD
- C. ABCC
- D. ABD
- E. ABDC

Answer: C

Q3. Given the code fragment:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         StringBuilder sb1= new StringBuilder("Durga");
6)         String str1=sb1.toString();
7)         //insert code here==>Line-1
8)         System.out.println(str1==str2);
9)     }
10) }
```

Which code fragment,when inserted at Line-1,enables the code to print true?

- A. String str2=str1;
- B. String str2=new String(str1);
- C. String str2=sb1.toString();
- D. String str2="Durga";

Answer: A

Q4. You are developing a banking module. You have developed a class named ccMask that has a maskcc method.

Given the code fragment:

```
1) class CCMask
2) {
3)     public static String maskCC(String creditCard)
4)     {
5)         String x="XXXX-XXXX-XXXX-";
6)         //Line-1
7)     }
8)     public static void main(String[] args)
```



```
9)  {  
10)    System.out.println(maskCC("1234-5678-9101-1121"));  
11)  }  
12) }
```

You must ensure that maskCC method returns a String that hides all digits of the credit card number except last four digits (and the hyphens that separate each group of 4 digits)

Which two code fragments should you use at line 1, independently to achieve the requirement?

- A) `StringBuilder sb=new StringBuilder(creditCard);
sb.substring(15,19);
return x+sb;`
- B) `return x+creditCard.substring(15,19);`
- C) `StringBuilder sb=new StringBuilder(x);
sb.append(creditCard,15,19);
return sb.toString();`
- D) `StringBuilder sb=new StringBuilder(creditCard);
StringBuilder s=sb.insert(0,x);
return s.toString();`

Answer: B, C

Q5. Consider the following code

```
1) public class Test  
2) {  
3)     public static void main(String[] args)  
4)     {  
5)         String str=" ";  
6)         str.trim();  
7)         System.out.println(str.equals("")+" "+str.isEmpty());  
8)     }  
9) }
```

What is the result?

- A. true false
- B. true true
- C. false true
- D. false false

Answer: D



Q6. Consider the following code:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s1="Java";
6)         String s2= new String("java");
7)         //Line-1
8)         {
9)             System.out.println("Equal");
10)        }
11)     else
12)     {
13)         System.out.println("Not Equal");
14)     }
15) }
16) }
```

To print "Equal" which code fragment should be inserted at Line-1

- A. String s3=s2;
if(s1==s3)
- B. if(s1.equalsIgnoreCase(s2))
- C. String s3=s2;
if(s1.equals(s3))
- D. if(s1.toLowerCase()==s2.toLowerCase())

Answer: B

Q7. Given the following code:

```
1) class MyString
2) {
3)     String msg;
4)     MyString(String msg)
5)     {
6)         this.msg=msg;
7)     }
8) }
9) public class Test
10) {
11)     public static void main(String[] args)
12)     {
13)         System.out.println("Hello "+ new StringBuilder("Java SE 8"));
```



```
14) System.out.println("Hello "+ new MyString("Java SE 8"));
15) }
16) }
```

What is the result?

- A. Hello Java SE 8
Hello MyString@<hashcode>
- B. Hello Java SE 8
Hello Java SE 8
- C. Hello java.lang.StringBuilder@<hashcode>
Hello MyString@<hashcode>
- D. Compilation Fails

Answer: A

Q8. Given:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s="Java Duke";
6)         int len=s.trim().length();
7)         System.out.println(len);
8)     }
9) }
```

What is the result?

- A. 9
- B. 8
- C. 10
- D. Compilation Fails

Answer: A

Q9. Which statement will empty the contents of a StringBuilder variable named sb?

- A. sb.deleteAll();
- B. sb.delete(0,sb.size());
- C. sb.delete(0,sb.length());
- D. sb.removeAll();

Answer: C



Q10. Given

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s="Hello World";
6)         s.trim();
7)         int i1=s.indexOf(" ");
8)         System.out.println(i1);
9)     }
10) }
```

What is the result?

- A. An exception is thrown at runtime
- B. -1
- C. 5
- D. 0

Answer: C



Topic-13: Wrapper Classes

Q1. Given the code fragment:

```
1) class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         Short s1=200;
6)         Integer s2=400;
7)         Long s3=(long)s1+s2;//Line-1
8)         String s4=(String)(s3*s2);//Line-2
9)         System.out.println("Sum is:"+s4);
10)    }
11) }
```

What is the result?

- A. Sum is: 600
- B. Compilation Fails at Line-1
- C. Compilation Fails at Line-2
- D. ClassCastException is thrown at Line-1
- E. ClassCastException is thrown at Line-2

Answer: C

Q2. Consider the code:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         Boolean[] b = new Boolean[2];
6)         b[0]=new Boolean(Boolean.parseBoolean("true"));
7)         b[1]= new Boolean(null);
8)         System.out.println(b[0]+".." +b[1]);
9)     }
10) }
```

What is the result?

- A. true..false
- B. true..null
- C. Compilation Fails
- D. NullPointerException is thrown at runtime

Answer: A



Q3. Given:

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         boolean a = new Boolean(Boolean.valueOf(args[0]));
6)         boolean b = new Boolean(args[1]);
7)         System.out.println(a+".."+b);
8)     }
9) }
```

And given the commands:

javac Test.java

java Test TRUE null

What is the result?

- A. true..null
- B. true..false
- C. false..false
- D. true..true

Answer: B

Q4. Given the code

```
1) public class Test
2) {
3)     public static void main(String[] args)
4)     {
5)         String s1="123";
6)         String s2="TRUE";
7)         Integer i1=Integer.parseInt(s1);
8)         Boolean b1= Boolean.parseBoolean(s2);
9)         System.out.println(i1+".."+b1);
10)
11)         int i2= Integer.valueOf(s1);
12)         boolean b2=Boolean.valueOf(s2);
13)         System.out.println(i2+".."+b2);
14)     }
15) }
```



What is the result?

- A. 123..true
123..true
- B. 123..true
123..false
- C. 123..false
123..true
- D. Compilation Fails

Answer: A



Topic-14: ArrayList

Q1. Given the code fragment:

```
1) import java.util.*;
2) class Test
3) {
4)     public static void main(String[] args)
5)     {
6)         List<String> l = new ArrayList<>();
7)         l.add("Robb");
8)         l.add("Bran");
9)         l.add("Rick");
10)        l.add("Bran");
11)        if(l.remove("Bran"))
12)        {
13)            l.remove("Jon");
14)        }
15)        System.out.println(l);
16)    }
17) }
```

What is the result?

- A. [Robb, Rick, Bran]
- B. [Robb, Rick]
- C. [Robb, Bran, Rick, Bran]
- D. An exception is thrown at runtime

Answer: A

Q2. Given the code fragment

```
1) import java.util.*;
2) class Test
3) {
4)     public static void main(String[] args)
5)     {
6)         ArrayList l = new ArrayList();
7)         String[] s;
8)         try
9)         {
10)            while(true)
11)            {
```



```
12)         l.add("MyString");
13)     }
14) }
15)     catch (RuntimeException e)
16)     {
17)         System.out.println("RuntimeException caught");
18)     }
19)     catch (Exception e)
20)     {
21)         System.out.println("Exception caught");
22)     }
23)     System.out.println("Ready to use");
24) }
25) }
```

What is the result?

- A. RuntimeException caught
Ready to use
- B. Exception caught
Ready to use
- C. Compilation Fails
- D. A runtime error thrown in the thread main

Answer: D

Q3.Given:

```
1) import java.util.*;
2) class Patient
3) {
4)     String name;
5)     public Patient(String name)
6)     {
7)         this.name=name;
8)     }
9) }
10) class Test
11) {
12)     public static void main(String[] args)
13)     {
14)         List l = new ArrayList();
15)         Patient p = new Patient("Mike");
16)         l.add(p);
17)         //insert code here==>Line-1
```



```
18)    if(f>=0)
19)    {
20)        System.out.println("Mike Found");
21)    }
22) }
23) }
```

Which code inserted at Line-1 enable the code to print Mike Found.

- A.
int f=l.indexOf(p);
- B.
int f=l.indexOf(Patient("Mike"));
- C.
int f=l.indexOf(new Patient("Mike"));
- D.
Patient p1 = new Patient("Mike");
int f=l.indexOf(p1);

Answer: A

Q4. Given the code fragment:

```
1)  import java.util.*;
2)  class Test
3)  {
4)      public static void main(String[] args)
5)      {
6)          ArrayList<Integer> l = new ArrayList<>();
7)          l.add(1);
8)          l.add(2);
9)          l.add(3);
10)         l.add(4);
11)         l.add(null);
12)         l.remove(2);
13)         l.remove(null);
14)         System.out.println(l);
15)     }
16) }
```

What is the result?

- A. [1, 2, 4]
- B. NullPointerException is thrown at runtime
- C. [1, 2, 4,null]
- D. [1, 3, 4,null]
- E. [1, 3, 4]
- F. Compilation Fails

Answer: A



Q5. Given the following class declarations

```
public abstract class Animal
public interface Hunter
public class Cat extends Animal implements Hunter
public class Tiger extends Cat
```

Which one fails to compile?

- A.
`ArrayList<Animal> l = new ArrayList<>();`
`l.add(new Tiger());`
- B.
`ArrayList<Hunter> l = new ArrayList<>();`
`l.add(new Cat());`
- C.
`ArrayList<Hunter> l = new ArrayList<>();`
`l.add(new Tiger());`
- D.
`ArrayList<Tiger> l = new ArrayList<>();`
`l.add(new Cat());`
- E.
`ArrayList<Animal> l = new ArrayList<>();`
`l.add(new Cat());`

Answer: D



Topic-15: Lambda Expressions

Q1. Given the code fragment:

Person.java:

```
1) public class Person
2) {
3)     String name;
4)     int age;
5)     public Person(String n,int a)
6)     {
7)         name=n;
8)         age=a;
9)     }
10)    public String getName()
11)    {
12)        return name;
13)    }
14)    public int getAge()
15)    {
16)        return age;
17)    }
18) }
```

Test.java:

```
1) class Test
2) {
3)     public static void checkAge(List<Person> list,Predicate<Person> predicate)
4)     {
5)         for (Person p: list)
6)         {
7)             if(predicate.test(p))
8)             {
9)                 System.out.println(p.name+" ");
10)            }
11)        }
12)    }
13)    public static void main(String[] args)
14)    {
15)        List<Person> iList=Arrays.asList(new Person("Durga",45),
16)                                           new Person("Ravi",40),
17)                                           new Person("Shiva",38));
18)        //line-1
```



```
19)    }  
20) }
```

Which code fragment, when inserted at line-1 enables the code to print Durga?

- A. `checkAge(iList,()->p.getAge())>40);`
- B. `checkAge(iList,Person p->p.getAge())>40);`
- C. `checkAge(iList,p->p.getAge())>40);`
- D. `checkAge(iList,(Person p)-> {p.getAge()}>40;);`

Answer: C



Topic-16: Date and Time API

Case-1:

LocalDate date=LocalDate.of(yyyy,mm,dd);
only valid values we have to take for month,year and day

LocalDate dt=LocalDate.of(2012,01,32);==>invalid
LocalDate dt=LocalDate.of(2012,15,28);===>invalid
LocalDate dt=LocalDate.of(2012,7,28);===>valid

Q1. Given the code fragment:

```
1) import java.time.*;  
2) public class Test  
3) {  
4)     public static void main(String[] args)  
5)     {  
6)         LocalDate dt=LocalDate.of(2012,01,32);  
7)         dt.plusDays(10);  
8)         System.out.println(dt);  
9)     }  
10) }
```

What is the result?

- A. 2012-02-10
- B. 2012-02-11
- C. Compilation Fails
- D. DateTimeException thrown at runtime

Answer: D

RE:

Exception in thread "main" java.time.DateTimeException: Invalid value for DayOfMonth (valid values 1 - 28/31): 32

LocalDate Class Parse Methods:

LocalDate class contains the following 2 parse methods.

1. public static LocalDate parse(CharSequence text)

Obtains an instance of LocalDate from a text string such as 2007-12-03.

The string must represent a valid date and is parsed using DateTimeFormatter.ISO_LOCAL_DATE.

The methods throws DateTimeParseException - if the text cannot be parsed



2. public static LocalDate parse(CharSequence text,DateTimeFormatter formatter)

Obtains an instance of `LocalDate` from a text string using a specific formatter.
The text is parsed using the formatter, returning a date.

The methods throws `DateTimeParseException` - if the text cannot be parsed

Note: `CharSequence` is an interface and its implemented classes are `String`, `StringBuffer`, `StringBuilder` etc

LocalDate class format() method:

`public String format(DateTimeFormatter formatter)`
Formats this date using the specified formatter.
This date will be passed to the formatter to produce a string.

Q2. Given the code Fragment:

```
1) import java.time.*;
2) import java.time.format.*;
3) public class Test
4) {
5)     public static void main(String[] args)
6)     {
7)         String date=LocalDate.parse("2014-05-
           04").format(DateTimeFormatter.ISO_DATE_TIME);
8)         System.out.println(date);
9)     }
10) }
```

What is the result?

- A) May 04,2014T00:00:00.000
- B) 2014-05-04T00:00:00.000
- C) 5/4/14T00:00:00.000
- D) An exception is thrown at runtime

Answer: D

Explanation: Here we have only Date value, but we are passing `DateTimeFormatter.ISO_DATE_TIME`.

RE:

Exception in thread "main" java.time.temporal.UnsupportedTemporalTypeException:
Unsupported field: HourOfDay
at java.time.LocalDate.get0(Unknown Source)



Eg:

```
1) LocalDateTime dt=LocalDateTime.parse("2014-05-04T13:45:45.000");  
2) String s=dt.format(DateTimeFormatter.ISO_DATE_TIME);  
3) System.out.println(s);
```

Output: 2014-05-04T13:45:45

Q3. Given the code fragment:

```
1) import java.time.*;  
2) import java.time.format.*;  
3) public class Test  
4) {  
5)     public static void main(String[] args)  
6)     {  
7)         LocalDate date1=LocalDate.now();  
8)         LocalDate date2=LocalDate.of(2018,4,15);  
9)         LocalDate date3=LocalDate.parse("2018-04-15",DateTimeFormatter.ISO_DATE);  
10)        System.out.println("date-1:"+date1);  
11)        System.out.println("date-2:"+date2);  
12)        System.out.println("date-3:"+date3);  
13)    }  
14) }
```

What is the result?

A.

date-1:2018-04-15

date-2:2018-04-15

date-3:2018-04-15

B.

date-1:04/15/2018

date-2:2018-04-15

date-3:Apr 15,2018

C. Compilation Fails

D. A DateParseException is thrown at runtime

Answer: A



Q4. Given the code fragment:

```
1) import java.time.*;
2) import java.time.format.*;
3) public class Test
4) {
5)     public static void main(String[] args)
6)     {
7)         LocalDateTime dt=LocalDateTime.of(2014,7,31,1,1);
8)         dt.plusDays(30);
9)         dt.plusMonths(1);
10)        System.out.println(dt.format(DateTimeFormatter.ISO_DATE));
11)    }
12) }
```

What is the result?

- A. 2014-07-31
- B. 07-31-2014
- C. 2014-09-30
- D. An Exception is thrown at runtime

Answer: A

Explanation: LocalDateTime is an immutable date-time object that represents a date-time.
dt.plusDays(30);
dt.plusMonths(1);

With these new objects will be created and dt is always point to specified date only(2014,7,31,1,1)

Note: LocalDate, LocalTime and LocalDateTime are immutable objects.



Topic-17: Garbage Collection

Q1. Given:

```
1) public class MarkList
2) {
3)     int num;
4)     public static void graceMarks(MarkList obj4)
5)     {
6)         obj4.num+=10;
7)     }
8)     public static void main(String[] args)
9)     {
10)        MarkList obj1= new MarkList();
11)        MarkList obj2=obj1;
12)        MarkList obj3=null;
13)        obj2.num=60;
14)        graceMarks(obj2);
15)    }
16) }
```

How many MarkList instances are created in memory at runtime?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: A

Q2. Given the code fragment:

```
1) class Student
2) {
3)     String name;
4)     int age;
5) }
6) And,
7) public class Test
8) {
9)     public static void main(String[] args)
10)    {
11)        Student s1= new Student();
12)        Student s2= new Student();
13)        Student s3= new Student();
```



```
14) s1=s3;  
15) s3=s2;  
16) s2=null;-->line-1  
17) }  
18) }
```

Which statement is true?

- A. After line-1, three objects eligible for garbage collection
- B. After line-1, two objects eligible for garbage collection
- C. After line-1, one object eligible for garbage collection
- D. After line-1, no object eligible for garbage collection

Answer: C