31920

Rayat Shikshan Sanstha's

Sadguru Gadge Maharaj College, Karad

(An Autonomous College)

SGMCK (AN EMPOWERED AUTONOMOUS COLLEGE)

Information to be filled by Student
(विद्यार्थ्याने भरावयाचा रकाना)

Day and Date : Friday, 31/10/2025

Language of Answer : English

Examination : B.S.C.C.S (entire) part-III sem-V (oct/nov-2025)

Question Paper Code No. : MJ-BCSE23-502

Subject : core java

Paper No. –

Section : –

(Office Use)

Q. No.	Examiner Marks	Moderator Marks
1	08	08
2	15	16
3	16	16
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12		
Total	39	40
Signature		

Q. C. - O. K.

IMPORTANT

As per Maharashtra Act No. XXXI of 1982 (7 & 8) whoever is found in or near an examination hall by the invigilator or any ner person appointed to supervise the conduct of the examination, copying answers to the question paper set at the amination, from any book, notes or answer papers of other candidates, of appearing at the examination for any other ndidates or using any other unfair means, shall, on conviction, be punished with imprisonment for a term which may tend to six months, or with fine which may extend to five hundred rupees or with both.

Whoever abets any offence punishable under this Act shall be punishable with the punishment provided for the offence.

ना : विद्यापीठ नियमानुसार जो कोणी परिक्षा हॉलजवळ किंवा हॉलमध्ये पर्यवेक्षकांना किंवा परीक्षेसाठी नेमलेल्या कर्मचाऱ्यांना उत्तरांची पुस्तक ूस किंवा अन्य विद्यार्थ्यांच्या उत्तरपत्रिकेतून नक्कल करताना आढळून येईल किंवा जवळ परीक्षा गैरव्यवहारासाठी वापरता येईल असे अक्षेपार्ह हित्य बाळगत असेल तर सदरची बाब परीक्षा प्रमाद मानून संबंधित व्यक्ति शिक्षेस पात्र राहील.

No.

महत्वाच्या सूचना

१. उत्तरपत्रिकेमध्ये अन्यत्र कोठेही बैठक क्रमांक (दिलेल्या जागेखेरीज) लिहू नये, तसेच अन्यत्र कोणत्याही प्रकारच्या खुणा व अशा खुणा आढळल्यास तो ओळख पटविण्याचा प्रयत्न मानन्यात येईल व असा परीक्षा प्रमाद शिक्षेस पात्र राहील.

२. उत्तरास प्रश्न क्रमांक व उपप्रश्न क्रमांक लिहणे अनिवार्य आहे.

३. पूर्ण प्रश्नांचे उत्तर सलग व सुवाच्य अक्षरात लिहावे.

४. अवाचनीय अक्षरातील उत्तर शुन्य गुणासाठी ग्राह्य मानण्यात येईल.

५. आकृत्याखेरीज सर्व उत्तरासाठी फक्त निळ्या शाईचा वापर करावा.

IMPORTANT

1. Do not write seat number anywhere except at the space provided for it. If seat number or any marks which indicates identity is/are found anywhere, it will be treated as malpractice and lapse. Such malpr lapse will be punishable under Maharashtra University Act 1994.
2. It is necessary to write the Question No. and sub Question Number before answer.
3. Write the complete answer in sequential manner and then start the next question in readable handwriting
4. Answer in an illegible & undecipherable handwriting are liable to be marked as zero.
5. Use of blue color ink (expect diagrams) is permitted.

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Q. No.	1			TOTAL	1			TOTAL
Marks	08			08	08			08

Q. No.

1] b] JVM

2] d] Package -> Class -> Method

3] d] public

4] d] constructor overloading

5] c] extends

6] a] call superclass constructor or method

7] a] try catch

8] b] start()

08

08

Q. No.	2 A, C		TOTAL	2 AC		TOTAL
Marks	8+7	=	15	8+8	=	16

Q. No.

Q2 A] The control structure are used to give the condition.

1] If statement :-
If the condition is true the block will executed otherwise skipped.
syntax -

```
if (condition)
{
    // block to be executed
}
```

Example -

```
public class Program
{
public static void main(String []ar
{
    int a = 28;
    if (a>18)
    {
        System.out.println("eligible
            for voting");
    }
}
}
```

2] If-else statement.
If the condition is true then the if block will be executed otherwise else block will execute.
syntax -

```
if (condition)
{
    // block to be executed
}
```

Q. No.

```
else
{
  // block to be executed
}
```

Example -

```
public class Program
{
  public static void main(string[] args)
  {
    int a=28;
    if (a>18)
    {
      System.out.println("Eligible for vote");
    }
    else
    {
      system.out.println("Not eligible");
    }
  }
}
```


If-Else-If Ladder :

When we have to check multiple condition then we can use else if ladder. The block of correct condition will be executed.

Syntax -

```
if (condition)
{
  //block
}
else if (condition)
{ // block
```

Q. No.					TOTAL				TOTAL
Marks									

Q. No.

```
else if (condition)
{
  // block
}
else
{
  // block
}
```

Example :-

```
public class Program
{
  public static void main(string [] arg
  {
    int a = 10;
    if (a == 5)
    {
      system.out.printen ("a is 5");
    }
    else if (a == 7)
    {
      system.out.printen ("a is 7");
    }
    else if (a == 10)
    {
      system.out.printen ("a is 10");
    }
    else
    {
      System.out.printen ("Invalid
                           input");
    }
  }
```

Q. No.

Branching statement -

1] Break statement -

The break statement is used to stop or break the loop.

Syntax -

```
if (condition)
{
  break;
}
```

Example -

```
public class Program
{
  public static void main (String [] args)
  {
    for(i=0; i<10; i++)
    {
      if(i==5)
      {
        break;
      }
      System.out.println(i);
    }
  }
}
```

2] Continue statement -

The continue statement is used to skip the current itteration.

Syntax -

```
if (condition)
{
  continue;
}
```

Q. No.				TOTAL				TOTAL
Marks								

Q. No.

Example -

```
public class Program
{
  public static void main(string []arg
  {
    for(i=0; i<=10; i++)
    {
      if (i==5)
      {
        continue;
      }
      System.out.println(i);
    }
  }
}
```

3] Return statement :

The return statement is used to retu a value.

The return keyword is used.

Example :

```
public void square (int n)
{
  if(n<0)
  {
    return -1;
  }
  System.out.println(n*n
}
```

08
08

Q. No.

Q] Inheritance -

- Inheritance is object oriented programming concept.
- Inheritance is used to provide a reusable code.
- In Inheritance ~~base~~ derived class inherits properties of base class.
- We can create object of derived class.
- Java does not support multiple inheritance.
- Interface concept is used to achieve multiple inheritance.

syntax - class A
{
//base class
}
class B extends A
{
//derived class
}

- Extend keyword is used to achieve inheritance in java.
- There are following types of inheritance -

1] Single inheritance

- The single inheritance is also called simple inheritance.
- In single inheritance only one base class and only one derived class is present.

Q. No.				TOTAL				TOTAL
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Q. No.

Syntax -

```
class A
{
  // base class
}
class B extends A
{
  // derived class
}
```

Example -

```
public class Program
{
  class A
  {
    void display()
    {
      System.out.println("Hello I am
          from class A");
    }
  }
  class B extends A
  {
    void show()
    {
      System.out.println("Hello I am
          from class B");
    }
  }
  public class Main
  {
    public static void main(String[]a
    {
      B ba = new b();
```

Q. No.

```
        ba.display();
        ba.show();
    }
}
```

2] Multilevel Inheritance :-

- In multilevel inheritance class C access B, class B access A.
- The subderived class access derived class and derived class access base class.

Syntax -

```
class A
{
    //base class
}
class B extends A
{
    //derived class
}
class C extends B
{
    //subderived class
}
```

Example -

```
public class A
{
    public void show()
    {
        System.out.println("Hello I am from class A");
    }
}
```

Q. No.				TOTAL				TOTAL
Marks								

Q. No.

```
class B extends A
{
   public void display ()
   {
    System.out.println("Hello I am fr
      class B");
   }
}
class C extends B
{
   public void put ()
   {
    System.out.println("Hello I am fro
      class C");
   }
}
public class Main
{ public static void main(String []ar
   {  C ca = new ca ();
      ca.show ();
      ca.display ();
      ca.put ();
   }
}
```

- In above program class C inherits B & class B inherits A.
- hence we can create object of class C.

No.

3] Hierarchical inheritance -

- In hierarchical inheritance multiple derived class are present.
- We can create object of every derived class.

Syntax - class A
{
// base class
}
class B extends A
{
// derived class
}
class C extends A
{
// derived class
}

Example - ~~public~~ class A
{
public void show()
{
System.out.println("I am from class A");
}
}
class B extends A
{
public void display()
{
System.out.println("I am from class B");
}
}

Q. No.				TOTAL				TOTAL
Marks								

Q. No.

```
class C extends A
{
  public void put()
  {
    System.out.println("I am fro
      class C");
  }
}
public class Main
{
  public static void main(String
  {
    b ba = new b();
    ba.show();
    ba.display();
    C ca = new C();
    ca.show();
    ca.put();
  }
}
```

- In above program two derived class are present class B & class
- class B & class C inherits the properties of class A.
- We create object of class B and class C.
- class B & class C are derived c
- class C & class B both are acce the method display().

Q. No.	3b	c	d	e	TOTAL				TOTAL
Marks	4	4	4	4	16				

No.

b Method Overloading -

- In method overloading the methods are with same name but with different parameter list.
- The multiple methods are present in same class.
- The returntype must be same or different.
- It support to compile time polymorphism.
- Inheritance is not used in method overloading.

Example - public class Program {
void add(int a, int b)
{
System.out.println("addition =" (a+b));
}
void add (int a, int b, int c)
{
System.out.println("addition =" (a+b+c));
}
void add (double a, double b)
{
System.out.println("addition =" (a+b));
}
public static void main (String [] args)
{ Program P = new Program ();
P.add (5,7);
P.add (5,7,1);
P.add (5.7, 7.4);
}
}

Q. No.				TOTAL				TOTAL
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Q. No.		
c]	Interface	Abstract class
1]	In interface interface keyword is used	In abstract class abstract keyword is used.
2]	In interface implement keyword is used.	In abstract class extend keyword is used.
3]	Interface is not a class.	Abstract class is a class.
4]	Multiple interface are used in single program.	Only one abstract class is used in single program.
5]	We can create object of interface.	We can not create object of abstract class
6]	In interface all the methods are abstract.	In abstract class both abstract and non abstract method are present.
7]	Interface is used to achieve multiple inheritance.	Abstract class is used to achieve abstraction

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l Date : Friday, 31/10/2025

ge of Answer : English

ation : BSCCS (Centre) part-III
n-U (Oct/Nov-2025)

on Paper Code No. : MJ-BCS-E23-502

t : core java

No. –

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(Office Use)

Q. No.	Examiner Marks	Moderator Marks
1		
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Total		
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Q. C. - O. K.

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Q. No.				TOTAL				TOTAL
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Q. No.

d) Exceptions in Java -

- The error that occurs at runtime is calle exception.
- The exception is occur at runtime.
- The exception can be handled using try catch block.
- The exception is occur due to the small mistake in program.
- There are many types of exception such as.
  - Airthmatic exception
  - Array Index Out of bound exception
  - File not found exception
  - Null pointer exception
- The exception can be recovered by using program.
- The java provides exception handling mechanism.
- Exception handling mechanism includes - throw, throws, try. catch, finally keywo

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Example.

```
Public class Program
{
  public static void main (string [:
    args)
    {
      try{ int a=10, b=0;
           int result = a / b;
      }
```

```
catch (Airthmatic Exception e)
{
  system.out.println("Divide by zero
      exception");
}
finally
{
  system.out.println("The finally block
      will always executed");
}
}
}
```

- In above program divide by zero is exception.
- It is handled by using try-catch block.

e] Features of Java -

1] Platform independent -
With the help of java virtual machine (JVM) java code can run on any hardware platform or device or operating system.

2] Object oriented -
Java supports to the object oriented programming concept. It supports to the concepts like inheritance, polymorphism, encapsulation and abstraction.

Q. No.				TOTAL				TOTAL
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Q. No.

3] Simple -
Java is similar like c & cpp it have simple syntax and structure. Java does not support complicated struct like pointer operator overloading.

4] Secure -
Java provide the following security.
1] bytecode verification
2] data security
3] handle the exception
4] No direct access to memory

5] Robust -
Java has feature like memory management it support the features like exception handling, garbage collection.

6] ~~Monitor~~ Increase Performance -
The java can convert the bytecod into the machine code with the help of JIT compiler so it increases the performance.

7] Rich API -
Java can provide a large set of libraries and packages.

1988

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ct : core java

No. —

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Q. No.				TOTAL				TOTAL
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Q. No.

8] Portable -
Java is portable among the multiple operating system.

9] Multithreading -
The Java can support the concept of multithreading which help in increasing performance.

10] Distributed -
The java can support to the distribute with the help of tool like remote motion innovation (RMI) & protocol like HTTP & FTP.

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Q. No.				TOTAL				TOTAL
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