

SpellIndia

INDIA'S **1**
No.

SPELLING BEE

Preparatory Study Material
Provider

www.phonicstore.com

ICSE ACADEMY
www.spellbeeacademy.com



PREPARE
for
ICSE
Class 10
**Computer
Application**

Questions ONLY

A Collection
of Questions
from Prelim
exam papers of
various
ICSE schools



ICSE ACADEMY: How to Prepare for ICSE Class 10 exams

<https://www.spellbeeacademy.com/icse.html>



How to Prepare for ICSE Class 10 exams : Free Resources

Please click on subject to proceed further.

We will keep adding resources here till "March 2026".

So, save this link, keep visiting and stay updated.

(Resources include : Syllabus, Past Year Papers, Specimen Papers, Competency based Questions, Books pdf downloadable, 350+ Term Papers / Prelim Papers of various schools - across subjects, etc.)

01 English Literature

02 English Language

03 Geography

04 History & Civics

05 Physics

06 Chemistry

07 Mathematics

08 Biology

09 Computer Applications

10 Physical Education

11 Hindi

12 Commercial Studies

13 Economics

14 Technical Drawing

15 Environmental Science

16 Home Science

17 Gujarati

18 Marathi

19 French

SCAN QR code to buy the book at amazon NOW.

SpellIndia
INDIA's No. 1 SPELLING BEE
Preparatory Study Material Provider
www.spellindia.com

ICSE ACADEMY
www.spellbeeacademy.com

Pati's

PREPARE
for
ICSE
Classes 9 & 10
ENGLISH GRAMMAR
(includes Board Specimen Papers of 5 years & Competency-focused questions)

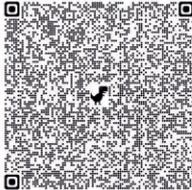
28 YEARS Past Questions

75 Practice TESTS

According to latest ICSE syllabus
2024-2027 exams

Debashis Pati
Author is the 1st individual to write preparatory books on various topics of "multiple" Spelling Bee competitions in India. He has written the Maximum Number of Spelling Books as well as Tests in the world.

Spelling / Vocabulary / Grammar Olympiad Exam conductor.



SpellIndia
INDIA's No. 1 SPELLING BEE
Preparatory Study Material Provider
www.spellindia.com

ICSE ACADEMY
www.spellbeeacademy.com

Pati's

PREPARE
for
ICSE
Class 10
(Acts 3 to 5 only)
Julius Caesar

1000+ Practice QUESTIONS*

30 Practice TESTS
(Prelim exam questions of 30 schools)

Past Years' Questions (13 years: 1990 onwards)
Competency focused Questions (1 year)
Multiple choice Questions (850+ nos*)
Extract based Questions (65+ extracts*)
* excludes the questions in the 13 past years' questions and the 30 Tests.

According to latest ICSE syllabus
2024-2027 exams

Debashis Pati
Author is the 1st individual to write preparatory books on various topics of "multiple" Spelling Bee competitions in India. He has written the Maximum Number of Spelling Books as well as Tests in the world.

Spelling / Vocabulary / Grammar Olympiad Exam conductor.



SpellIndia
INDIA's No. 1 SPELLING BEE
Preparatory Study Material Provider
www.spellindia.com

ICSE ACADEMY
www.spellbeeacademy.com

Pati's

PREPARE
for
ICSE
Class 10
HINDI GRAMMAR

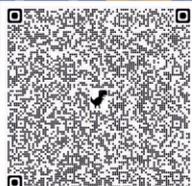
350+ SAMPLE QUESTIONS

51 TEST PAPERS

350+ Sample practice questions & # 51 Tests

According to latest ICSE syllabus
2025 / 2026 onwards

तामसी पति
Tamasee Pati



SpellIndia
INDIA's No. 1 SPELLING BEE
Preparatory Study Material Provider
www.spellindia.com

ICSE ACADEMY
www.spellbeeacademy.com

Pati's

PREPARE
for
ICSE
Class 10
CIVICS

40 TEST PAPERS

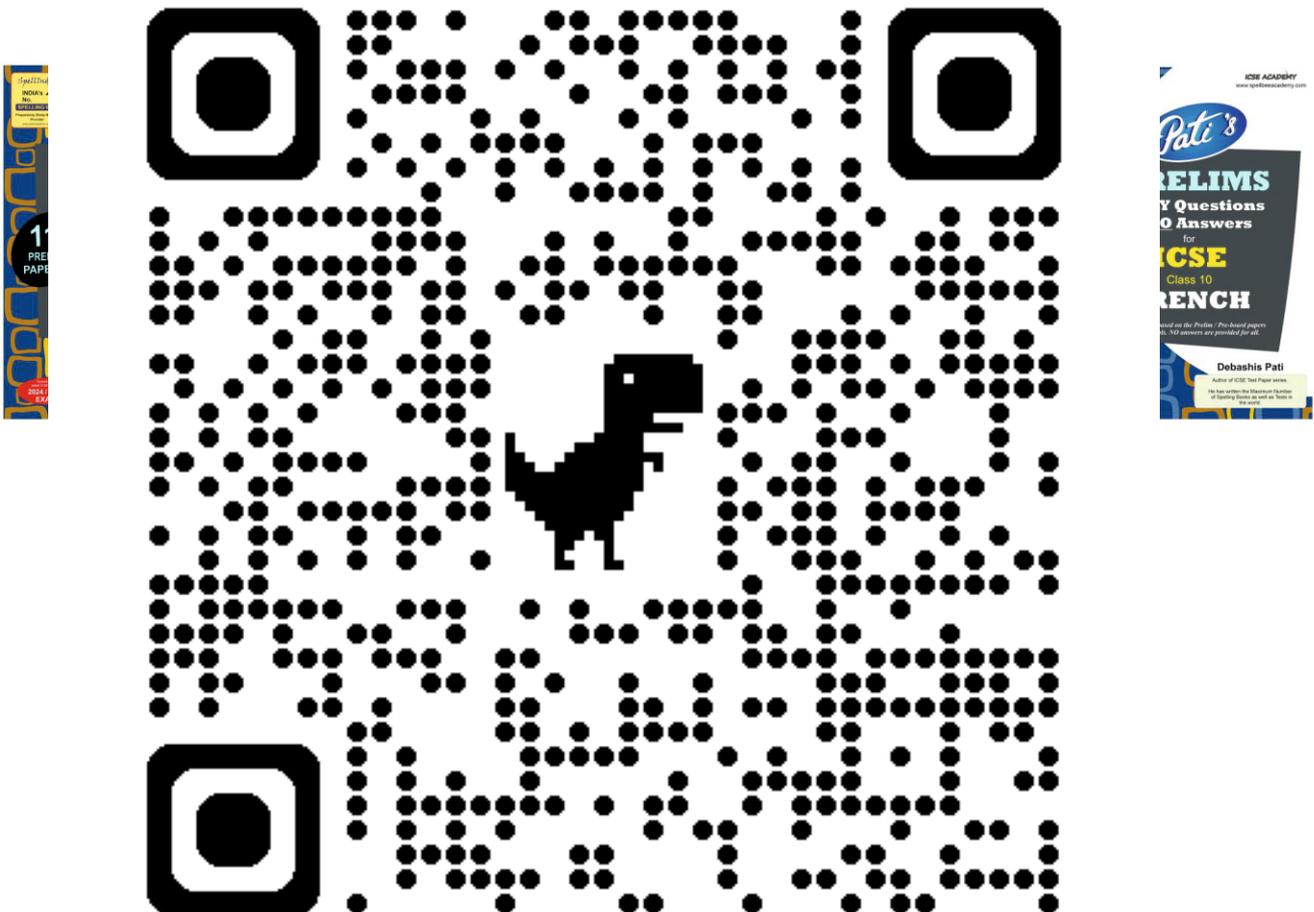
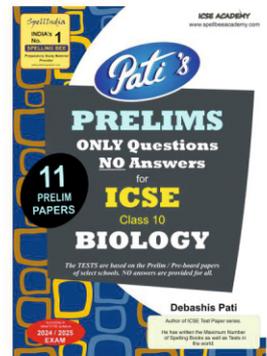
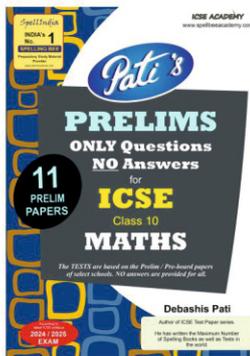
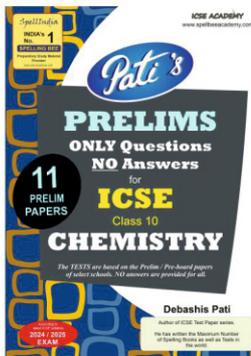
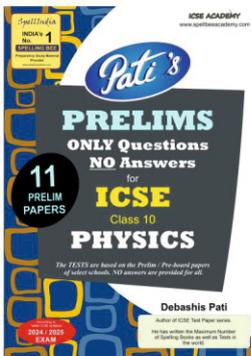
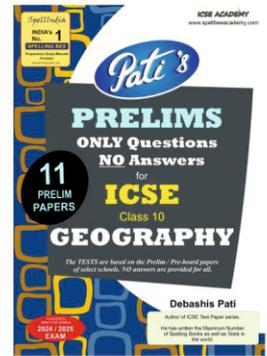
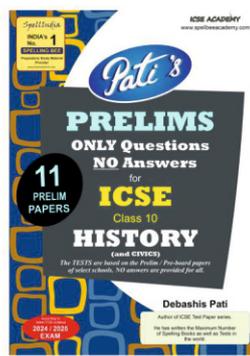
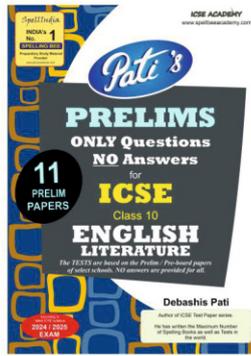
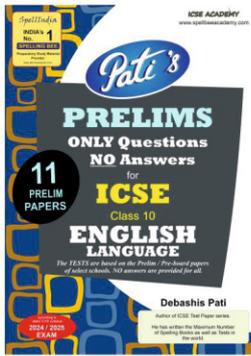
The TESTS are based on the Prelim / Pre-board papers of various schools. Answers are provided for all.
Competency Based Questions and 3 Specimen Papers are provided.

According to latest ICSE syllabus
2024 / 2025 EXAM

Debashis Pati
Author of ICSE Test Paper series.
He has written the Maximum Number of Spelling Books as well as Tests in the world.



Scan QR code for Free Access to 500+ Prelim Papers across 20 subjects





ICSE ACADEMY

Set 3c : Question Papers

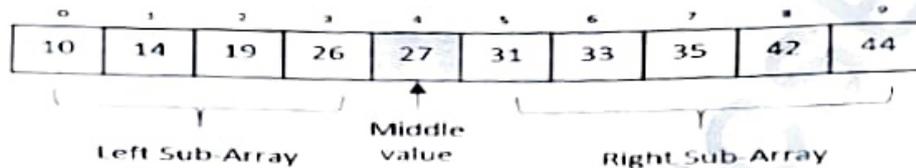
(In this flipbook)

21. PG Garodia, Mumbai
22. Sri Sri Ravishnakar Vidya Mandir, Mumbai
23. ASIC TN & PY Region
24. Karnataka ICSE Schools Association (KISA)
25. South End School, Kolkata
26. Association of Odisha ICSE Schools
27. CNM, Mumbai
28. Thakur International, Mumbai
29. Parle Tilak Vidyalay, Mumbai
30. Lokhandwala Foundation, Mumbai

(vi) Constructor name and class name must be _____

- (a) different (b) random
(c) same (d) unique

(vii)



Identify the type of the searching in the above picture

- (a) Insertion
(b) Linear
(c) Sequential
(d) Binary

(viii) Find the output of the following code snippet

```
char ch='a';
int d=ch++;
System.out.println(d);
```

- (a) a (b) 97
(c) b (d) 98

(ix) Assertion (A) : In object oriented programming, a class can be considered as an object factory.

Reason (R) : A class defines the blueprint for creating objects and objects are instance of classes.

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A).
(c) Assertion (A) is true and Reason (R) is false.
(d) Assertion (A) is false and Reason (R) is true.

(x) // is used for

- (a) single line comment (b) multiline comment
(c) escape sequence (d) forward slash

(xvii) Which of the following functions does not return integer value?

1. charAt()
 2. indexOf()
 3. random()
 4. length()
- (a) only 1
 (b) only 3
 (c) 1 and 3
 (d) 2 and 4

(xviii) Identify the type of error in the following code snippet.

```
int a=100, b=75.0, c=50;
if (a>b && a>c)
```

```
    System.out.println(a + " is Biggest" );
```

- (a) Exception (b) Syntax Error
 (c) Runtime Error (d) Logical Error

(xix) Arrange the following data types in descending order of memory storage in bytes

i char a[20] ii int a[4][4] iii double a[4]

- (a) i ii iii (b) iii ii i
 (c) ii i iii (d) iii i ii

(xx) In call by reference, _____ are passed as an argument

- (a) formal parameters (b) primitive data types
 (c) objects (d) inbuilt functions

Question 2

(i) Two arrays are declared as

```
int X[] = {55, 22, 77, 11, 44, 54};
```

```
int Y[] = {90, 60, 30, 40, 20, 70};
```

After placing all the elements of array X and array Y, alternatively in the array Z

(a) What will be order of elements in array Z?

(b) System.out.println(X[2] % Y.length); [2]

(ii) Rewrite the following code using the if .. else statement:

```
int m = 400;
```

```
double d = (m>300) ? (m / 10.0) * 2 : (m / 20.0) - 2; [2]
```

(iii) What is the difference between these two statements?

a. int sum[] = new int[10];

b. sum[1] = 10; [2]

What will be the output of the following?

```
int i = 15, j = 20, result=0;
```

```
result = i-- --j + ++i - j++ + i++ + ++j;
```

```
System.out.println("Result = " + result);
```

[2]

- (v) Following program displays first 5 numbers between 1 and 100 that are divisible by both 3 and 5. However due to some errors terminal window is not showing the correct result. Re-write the given code after removing all the errors.

```
int i, count=0;
```

```
for(int i=1; i>=100; i+=1)
```

```
{
```

```
    if(i%3 || i%5==0)
```

```
    {
```

```
        System.out.println(i);
```

```
        count++;
```

```
    }
```

```
}
```

[2]

- (vi) How many bits will be occupied in the following program?

```
class sample
```

```
{ void main( )
```

```
    { float f = 5.8 f;
```

```
      boolean b = false;
```

```
      short s = 99;
```

```
    }
```

```
}
```

[2]

- (vii) int i=10;

```
do
```

```
{
```

```
    System.out.print(i + "\t");
```

```
    i += 40;
```

```
}while(i<=100);
```

- a. How many times the loop will be executed?

- b. What will be the output?

[2]

- (viii) Find output of the following Java Statements.

```
String str="GRANDPARENTS";
```

```
System.out.println(str.substring(str.length() - 7),str.length( ));
```

```
System.out.println(str.endsWith(""));
```

[2]

(ix) Rewrite the following using while loop

```
x := 14 ; x++
```

```
{
    System.out.println(x++);
    y += 5;
}
```

```
System.out.println("Y = " + y);
```

[2]

(x) Differentiate between Autoboxing and Unboxing

[2]

SECTION B

(Answer any **four** questions from this **Section**.)

The answers in this section should consist of the programs in either BlueJ environment or any program environment with Java as the base.

Each program should be written using **Variable descriptions / Mnemonic Codes** so that the logic of the program is clearly depicted.

Flow-Charts and Algorithms are not required.

Question 3

[15]

Define a class **TELEGRAM** as per the following description.

Instance Variables:

- name - to store name
- words - to store number of words
- charges - to store charges

Member Methods:

- (1) TELEGRAM() Default constructor to initialize data members with default values.
- (2) void accept() To input values for name and words, using **Scanner class methods** only
- (3) void calculate() To calculate charges as per the following criteria.
 - For first 10 words – Rs. 10
 - For every additional word – Rs. 2.5 per word
- (4) void display() To print all the details

Write a main method to create an object of the class and call all the member methods.

Question 4

[15]

Define a class to store minimum temperature and maximum temperature for a week in 7 x 2 array

Print both the temperatures in matrix form. Also print average temperature of each day.

Question 5

[15]

Define a class to overload a method Print() as follows :

void Print (char ch1, char ch2) : To display all the consonants between ch1 and ch2

void Print (char ch, int r) : To display the following pattern, **if ch='@' and r=4**

```
@ @ @ @
@ @ @
@ @
@
```

Question 6

[15]

Define a class to input 50 integer numbers in a single dimensional array. Arrange all the numbers in descending order using **selection sort technique**. Print the sorted numbers

Question 7

[15]

Rohit wants to design a program in Java to Encrypt the word. The encryption algorithm does the following steps to encrypt the word.

- a. It first converts all the alphabets to small letter
- b. It then converts alphabets to its next character. Example : D → e, J → k. However 'Z' becomes 'a'

Sample Input : **REALIZATION**

Sample output : **sfbmjabujpo**

Define a class to help Rohit to achieve such encryption of the word entered by the user.

Question 8

[15]

Define a class to input a number. Print the absolute difference of first and last digit.

Sample Input : 4345797

Sample Output: Absolute difference of first and last digit = 3



SRI SRI RAVISHANKAR VIDYA MANDIR, MULUND
 SECOND PRELIMINARY EXAMINATION (2025-26)
 SUBJECT: COMPUTER APPLICATIONS

CLASS: X

DATE: 21/01/2026

MARKS: 100

TIME: 2 Hours

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

This Paper is divided into two Sections.

Attempt all questions from Section A and any four questions from Section B.

The intended marks for questions or parts of questions are given in brackets [].

This Question Paper consists of 7 printed pages

SECTION A

(Attempt all questions from this Section.)

Question 1.

Choose the correct answers to the questions from the given options.

(Do not copy the question. Write the correct answer only.)

[20]

(i) Why an object is often called a "Runtime Entity"?

- (a) It is defined while the code is being written.
- (b) It occupies memory only during the execution of the program.
- (c) It can only be used by the main method.
- (d) It runs faster than a class.

(ii) Which statement is **most accurate** about the relationship between a **Class** and an **Object** in Java?

- (a) A Class is a logical blueprint, and an Object is a physical instance of that blueprint created in the memory (heap).
- (b) An Object is a blueprint, and a Class is a run-time instance of that blueprint.
- (c) An Object can exist without a Class, but a Class cannot exist without an Object.
- (d) A Class is a run-time entity, and an Object is a logical construct.

(iii) Identify the concept exhibited by the adjacent picture.

- (a) Class
- (b) Object
- (c) Memory Allocation
- (d) Compilation

(iv) When an object is no longer referenced by any variable, what will it be eligible for?

- (a) Compilation
- (b) Serialization
- (c) Garbage Collection
- (d) Multithreading



ICSE ACADEMY A scientist is developing a program to track the movement of tectonic plates, which move at approximately 0.00000003 meters per second. Which data type should be used for the variable 'movementSpeed' to ensure maximum precision during complex calculations?

- (a) float
- (b) long
- (c) double
- (d) Double

(vi) After using `sc.nextInt()`, if a programmer immediately uses `sc.nextLine()`, the program often "skips" the input. What can be the probable reason?

- (a) `nextInt()` leaves a newline character `\n` in the buffer.
- (b) `nextLine()` is not compatible with `nextInt()`
- (c) The Scanner is automatically closed
- (d) The buffer exceeds its capacity.

(vii) Consider the following code snippet:

```
for(int i=1; i<3; i++)
{
    for (int j=1; j<i; j++)
    {
        System.out.println(Iteration number: " + j);
    }
}
```

How many times do the nested loop execute?

- (a) 1
- (b) 2
- (c) infinite times
- (d) never execute

(viii) Consider the following declaration: `int M[][] = new int[3][4];` and the initialization loop:

```
for(int i=0; i<3; i++)
{
    for(int j=0; j<4; j++)
    {
        M[i][j] = i+j;
    }
}
```

What is the difference between the values stored at `M[2][1]` and `M[1][2]`?

- (a) 0
- (b) 3
- (c) 1
- (d) 4

(ix) If `a=6`, `b=2` and `c=3`, what is the output of the below Java statement?

```
System.out.print("Output1: " + (a == b * c));
System.out.println("Output2: " + (a == (b * c)));
```

- (a) Output 1: false Output 2: true
 - (b) Output 1: true
 - (c) Output 1: true Output 2: true
 - (d) Runtime error
- Output 2: true

(x) Which index pair correctly accesses the bottom-right corner element of a matrix `M` with `R` rows and `C` columns?

- (a) `M[0][0]`
- (b) `M[R-1][C-1]`
- (c) `M[R-1][0]`
- (d) `M[0][C-1]`

- (f) In a program that calculates the difference between two large numbers A and B, the difference must always be positive. Write the statement using predefined function that ensures this positive difference. [2]
- (g) Determine the final value of k after the following loop terminates: [2]
- ```
int k=1;
for(int i=5; i>0; i--)
 k *= i;
```
- (h) What will be the output of the following Java expression? [2]
- ```
System.out.println(('a' + 2) + "b");
```
- (i) How many asterisks (*) will be printed by the code? [2]
- ```
for(int i=1; i<=3; i++)
{
 for(int j=1; j<=i; j++)
 System.out.print("*");
}
```
- (j) Shriya is comparing a String variable userInput with the constant String "EXIT"; She is confused about using an appropriate method out of the == / equals() / equalsIgnoreCase() to achieve this task. Which method do you recommend Shriya that can act as the most robust choice in Java programming? Write the correct code snippet for the same. [2]

### Section B

*Attempt any four questions from this section.*

*The answers in this Section should consist of the Programs in either BlueJ environment or any program environment with Java as the base.*

*Each program should be written using Variable description/Mnemonic Codes such that the logic of the program is clearly depicted.*

*Flowcharts and algorithms are not required.*

#### Question 3.

Write a class named StockItem with the following specifications: [15]

| <i>Data Members</i> | <i>Purpose</i>                   |
|---------------------|----------------------------------|
| <i>itemName</i>     | <i>Name of the item</i>          |
| <i>unitPrice</i>    | <i>Cost per unit</i>             |
| <i>quantity</i>     | <i>Number of units available</i> |

|                                |                                                                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>calculateGST()</code>    | <i>Accepts the GST rate (double) as a parameter.<br/>Calculates and returns the total GST amount payable on the entire stock (i.e., <math>unitPrice * quantity * (GST\_rate/100)</math>).</i> |
| <code>isLowStock()</code>      | <i>Returns true if the quantity is below a threshold of 100 and false otherwise</i>                                                                                                           |
| <code>displayDetails ()</code> | <i>Displays the itemName, unitPrice, quantity, and whether the stock is "LOW" or "ADEQUATE" (using the result of <code>isLowStock()</code>).</i>                                              |

Create an object of the class and call the above methods.

#### Question 4.

A departmental store stores its 10 product ids and their prices in two parallel 1-D arrays, named `ids` and `prices` respectively. Write a program to search for a product ID entered by the user. If found, display the price and increase it by 10% as an "Inflation Update." If not found, display "Product not found in the array." [15]

**Input:** `ids`: [101, 102, 103, 104, 105, 106, 107, 108, 109, 110]

`Price`: [50.0, 150.0, 200.0, 45.0, 90.0, 300.0, 120.0, 75.0, 88.0, 400.0]

**Output:**

Enter the product id to be searched: 108

Old Price: ₹75.0

Updated Price (Inflation): ₹82.5

#### Question 5.

Write a program to input a sentence and then process it to count the number of words that **start** and **end** with a vowel. (Assume the sentence has no punctuation and all words are separated by a single space). [15]

**Example 1:**

**Input:** ALICE is an intelligent Emu

**Output:** 3 (ALICE, an, Emu).

#### Question 6.

Write a program to input a square matrix (a Double Dimensional Array) of size 5x5. Accept the elements into the matrix and display the original matrix. Check whether it's a Diagonal Matrix.

A Diagonal matrix is a matrix whose major diagonal elements are non-zeroes and rest of the elements are zeroes. [15]

### Question 7.

A Kaprekar number is a number whose square when divided into two parts and such that sum of parts is equal to the original number and none of the parts has value 0. [15]

**Example:**

**Input:**  $n = 45$

**Output:** 45 is a Kaprekar number

**Explanation:**  $45^2 = 2025$  and  $20 + 25$  is 45

**Input:**  $n = 13$

**Output:** 13 isn't a Kaprekar number

**Explanation:**  $13^2 = 169$ . Neither  $16 + 9$  nor  $1 + 69$  is equal to 13

Write a program to accept a positive integer and check whether it is a Kaprekar Number or not.

### Question 8.

Define a class AreaCalculator that contains three overloaded methods named area(), each performing a different area calculation: [15]

(a) double area(double r) - Calculates the area of a circle.

(b) double area(double l, double b) - Calculates the area of a rectangle

(c) double area(int a, int b, int h) - Calculates the area of a trapezoid, using the

formula  $\frac{1}{2} \times (a + b) \times h$ .



## Question Paper 23

### ASISC TN AND PY REGION MOCK EXAMINATION ICSE COMPUTER APPLICATION (THEORY)

---

**Maximum Marks :100**

**Time Allowed : Two Hours**

1. *Answers to this Paper must be written on the paper provided separately.*
2. *You will not be allowed to write during first 15 minutes.*
3. *This time is to be spent in reading the question paper.*
4. *The time given at the head of this Paper is the time allowed for writing the answers.*

---

### SECTION A (40 Marks)

*(Attempt all questions from this Section.)*

#### Question 1:

[20]

Choose the correct answers to the questions from the given options.

(Do not copy the questions, write only the correct answers.)

(i) Which component of Java makes it platform independent?

- (a)JDK
- (b) JRE
- (c) JVM
- (d) Compiler

(ii) What is the output of: `System.out.println(10/4*2);`

- (a)5
- (b) 4
- (c) 2
- (d) 0

(iii) Which keyword is used to inherit a class in Java?

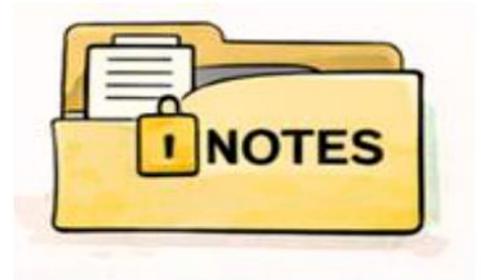
- (a)implements
- (b) inherit
- (c) extends
- (d) interface

(iv) What is the value stored in variable m?

```
double m=Math.sqrt(15625)+Math.floor(25.99)
```

- (a) 649.0
  - (b) 650.0
  - (c) 700.0
  - (d) None of these
- (v) Name the feature of java depicted in the picture below:

- (a) Data Abstraction
- (b) Inheritance
- (c) Encapsulation
- (d) polymorphism



(vi) Method prototype for a method update() that takes two integers and returns nothing is

- (a) double update(int,int)
- (b) void update(integer,integer)
- (c) void update(int,int)
- (d) update(int,int)

(vii) The method that return caseless comparison of two strings is

- (a) equals()
- (b) equalsIgnoreCase()
- (c) equalsCase()
- (d) equalsIgnore()

(viii) Given the code:

```
public class Flowers
{
 public static void main(String args[])
 {
 String s="Flowersarebeautiful";
 System.out.println(s.length()+s.lastIndexOf('u'));
 }
}
```

What will be the output of the code?

- (a) 35
- (b) 34
- (c) 36
- (d) 37

(ix) The function used to get index of last occurrence of a character in a string is :

- (a) Indexof()
- (b) indexOf()
- (c) LASTINDEXOF()
- (d) lastIndexOf()

(x) What is the output? `int x=5; System.out.println(++x + x++);`

- (a) 10
- (b) 11
- (c) 12
- (d) 13

(xi) `System.out.println("I said,\"It's wise to obey elders.\");`

The output of the above statement is:

- (a) I said,'It is wise to obey elders.'
- (b) I said, "It's wise to obey elders."
- (c) I said,It's wise to obey elders.
- (d) "It's wise to obey elders."

(xii) What is the final value stored in variable x?

`double x=Math.sqrt(169)+Math.floor(2.3);`

- (a) 15.0
- (b) 8.0
- (c) 6.0
- (d) 9.0

(xiii) Consider the code given below:

Class Stringclass

```
{
 Public static void main(String args[])
 {
 String obj= "Circus";
 String obj1="atmosphere";
 String obj2= "circus";
 System.out.println(obj.equals(obj1)+"@"+obj.equals(obj2));
 }
}
```

What will be the output of the code?

- (a) False@False
- (b) False@True
- (c) True@False
- (d) True@True

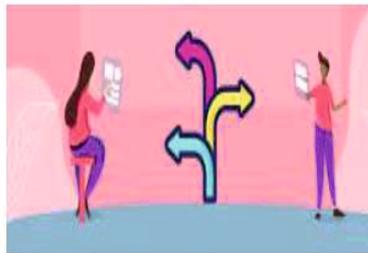
(xiv) In the picture, Anu and Rahul are standing at a point where different paths are shown.

Each path represents a different fixed choice.

Depending on the choice selected, only one path is followed.

Which Java control structure is most suitable to represent the situation shown in the picture?

- a) If-Else
- b) Nested If
- c) Switch-Case
- d) Looping



(xv) Assertion(A): In java statement written in lower case letter or upper case letter are treated as the same.

Reason(R) Java is case sensitive language

- (a) Both Assertion(A) and Reason(R) are True and Reason (R) is the correct explanation of Assertion(A).
- (b) Both Assertion(A) and Reason(R) are True and Reason (R) is not the correct explanation of Assertion(A).
- (c) Assertion(A) is True and Reason(R) is False.
- (d) Assertion(A) is False and Reason(R) is True.

(xvi) Consider the following program segment in which the statements are jumbled, choose the correct order of statements to swap two variables using third variable.

```
void swap(int a, int b)
{
a=b; —————> (1)
b=t; —————> (2)
int t=0; —————>(3)
t=a; —————> (4)
}
```

- (a)1,2,3,4
- (b)3,4,1,2
- (c)3,1,4,2
- (d)2,1,4,3

(xvii) Which of the following pairs of methods will cause a compile Time error due to incorrect method overloading?

- (a) void test(int a,int b) and void test(double a ,double b)
- (b) void test(int a,double b) and void test(double a ,int b)
- (c) void test(int a, double b) and void test(int a)
- (d) void test(int a) and int test(int a)

(xviii) Name the type of error, if any in the following statement. System.out.println(“Hello”).

- (a) logical
- (b) no error
- (c) runtime
- (d) syntax

(xix) Given array: int marr[]={101,202,303,404}; The value of marr[-1+2] is:

- (a) 101
- (b) 202
- (c) 303
- (d) 404

(xx) \_\_\_\_\_ Keyword is used while creating a static method.

- (a) static
- (b) final
- (c) instance
- (d) non static

### Question 2:

(i) Rewrite the following for loop segment to an exit controlled loop. [2]

```
for(int k=10;k>=-1;k--)
{
System.out.println(k*2);
}
System.out.println(k*4);
```

(ii) Evaluate the following expression: If the value of x=4, y=5,z=6, then v=x+ --z + y++ +y [2]

(iii) Give the output of the following program segment and specify how many times the loop is executed. [2]

```
String str="banana";
int i=0;
do
```

```

 {
 System.out.println(str.replace('a','*').charAt(i));
 i=i+3;
 }
 while(i<str.length());

```

(iv) Write the java expression  $\frac{|a+b|}{\sqrt{a^3+\sqrt{b^4}}}$ . [2]

(v) Write the java statement for creating an object named "ticket" of the class "Railway", which takes two parameters among that one is of string and one is of double. [2]

```

(vi) int sum(int arr[])
 {
 int s=0;
 for(int i=0;i<arr.length;i++)
 s+=arr[i];
 return s;
 }

```

Specify the type of the error in the above program and write the program to be error free. [2]

(vii) Consider and give the output of the following program: [2]

```

class report
{
 int a,b;
 report()
 {
 a=10;
 b=15;
 }
 report(int x, int y)
 {
 a=x;
 b=y;
 }
 void print()
 {
 System.out.println(a*b);
 }
 static void main()
 {
 report r = new report();
 r.print();
 report p = new report(4, 5);
 }
}

```

```
p.print();
}
}
```

(viii) Write the output for the following code?

[2]

```
Static void main()
{
int x[]= new int [6][50];
int arr[][]= {{3,9,10,20},{1,2,3,5},{7,9,90,100}}
System.out.println(arr[1].length);
System.out.println(x[3].length);
System.out.println(x[2][4].length);
}
```

(ix) Rewrite the following decision making statement using the conditional operator:

[2]

```
if(x<=0) value=2*x;
if(x>0&& x<10) value=5*x;
else value=0;
```

(x) Give the output of the following segment and specify how many times the loop is executed.

[2]

```
void demo()
{
String s="JAVA";
for(int i=0;i<s.length();i++)
{
char ch=s.charAt(i);
if(Character.isUpperCase(ch))
System.out.print(Character.toLowerCase(ch));
else
System.out.print(ch);
}
}
```

### SECTION B (60 MARKS)

Attempt **any four** questions from this Section.

The answers in this Section should consist of the Programs in either BlueJ environment or any program environment with Java as the base.

**Flow-Charts and Algorithms are not required.**

**Question 3:**

[15]

Write a program to initialize an array of 5 names and initialize another array with their respective telephone numbers. Search for a name input by the user in the list. If found display “Search Successful” and print the name along with the telephone number, otherwise display “Search Unsuccessful, Name not enlisted”.

**Question 4:**

Write a Java program to check if a number is cyclic or not.

A cyclic number is an integer in which cyclic permutations of the digits are successive multiples of the number.

The most widely known are 142857:

$$142857 \times 1 = 142857$$

$$142857 \times 2 = 285714$$

$$142857 \times 3 = 428571$$

$$142857 \times 4 = 571428$$

$$142857 \times 5 = 714285$$

$$142857 \times 6 = 857142$$

Input Data:

Input a number: 142857

*Expected Output*

It is a cyclic number .

**Question 5:**

[15]

Anshul transport company charges for the parcels of its customers as per the following specifications given below.

**Class name :** Atransport

**Member variables**

String name : to store the name of the customer

int w : to store the weight of the parcel in Kg

int charge :to store the charge of the parcel

**Member functions**

void accept() to accept the name of the customer, weight of the parcel from the user (using Scanner class)

void calculate() to calculate the charge as per the weight of the parcel as per the following criteria.

| Weight in Kg | Charge per Kg |
|--------------|---------------|
| Upto 10 Kgs  | Rs. 25 per Kg |
| Next 20 Kgs  | Rs 20 per Kg  |
| Above 30 Kgs | Rs. 10 per Kg |

A surcharge of 5% is charged on the bill.

void print() to print the name of the customer, weight of the parcel, total bill inclusive of surcharge in a tabular form in the following format

| Name | Weight | Bill | amount |
|------|--------|------|--------|
| XXX  | XXX    | XXX  | XXX    |

Define a class with the above-mentioned specifications, create the main method, create an object and invoke the member methods.

**Question 6:**

Define a class to overload the method print() as follows:

Void print() to print the following pattern using nested loops:

```

#@#@ #
#@#@#
#@#@#
#@#@#
#@#@#
#@#@#

```

double print( double a, double b): To display the sum of numbers between a and b with difference of 1.5

Ex: if a=1.0 b=4.0

output is: 1.0+ 2.5 + 4

int print( char ch1,char ch2) : Compare the two ascii code of the largest character.

**Question 7:**

A Double dimensional array is defined as N[4][4] to store numbers. Find the minimum number : And maximum number of the elements stored in Double Dimensional array(DDA).

**Sample Input:**

```

12 10 15 17
30 11 32 71
17 14 29 31
41 33 40 51

```

Sample Output:

```

Maximum number:
Minimum number:

```

**Question 8 :**

Define a class to accept a String and Print if it is a **Super string** or not

Enter the string and convert uppercase into lower case and vice versa

Example:

Enter the string: ComPuTer

Output: cOMpUtER

## KARNATAKA ICSE SCHOOLS ASSOCIATION ICSE STD .X PREPARATORY EXAMINATION 2026



### Subject: Computer Applications

Maximum Marks 100

Time Allowed: 2 hours

Date:19.01.2026

---

Maximum Marks: 100

Time allowed: Two hours

Answers to this Paper must be written on the paper provided separately.

You will **not** be allowed to write during the first **15** minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

---

This Paper is divided into two Sections.

Attempt all questions from Section A and any four questions from Section B.

The intended marks for questions or parts of questions are given in brackets[ ]

---

### SECTION A

(Attempt **all** questions from this **Section**)

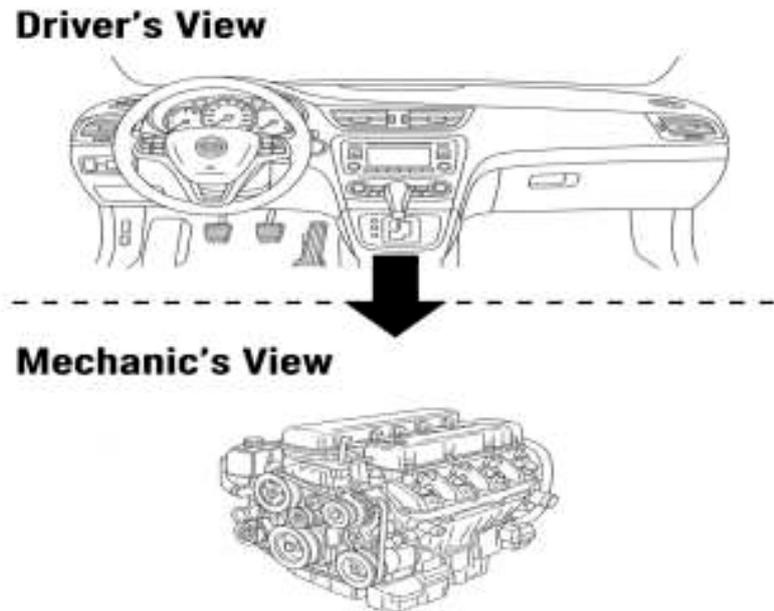
#### SECTION-A

##### Question 1

Choose the correct answers to the questions from the given options. [20]  
(Do not copy the questions, write only the correct answers)

- (i) What is stored in a wrapper object?
- (a) Only strings
  - (b) Primitive value
  - (c) Class name
  - (d) No value
- (ii) What is the output of the following code ?  
"MARKER".substring(1, 4);
- (a) ARK
  - (b) MAR
  - (c) RKE
  - (d) AR
- (iii) **Assertion (A):** The default case in a Java switch statement is optional.  
**Reason (R)** If no default case is provided, the program will give a compilation error.
- (a) Both A and R are true, and R is the correct explanation of A
  - (b) Both A and R are true, but R is not the correct explanation of A
  - (c) A is true, R is false
  - (d) A is false, R is true
- (iv) Which of the following statements about constructors is true?
- (a) A constructor can have a return type
  - (b) A constructor is called automatically when an object is created
  - (c) A class can have only one constructor
  - (d) Constructors can be inherited

(v) Name the feature of java depicted in the below picture.



- (a) Encapsulation
- (b) Inheritance
- (c) Abstraction
- (d) Polymorphism

(vi) How many times will the following loop execute?

```
int cnt = 4;
while (cnt > 1)
{
 System.out.print(cnt);
 cnt++;
}
```

- (a) 1 time
- (b) 3 times
- (c) 10 times
- (d) Infinite times

(vii) What is the output of the following Java statement?

```
System.out.println("Server says: \"Error!\\tTry again.\"");
```

- (a) Server says: "Error!\Try again."
- (b) Server says: "Error! Try again."
- (c) Server says: "Error!\tTry again."
- (d) Server says: Error! Try again.

- (viii) `int a = 3, b = 4;`  
`a += a++;`  
`b += ++b;`  
`System.out.println(a + " " + b);`  
(a) 7 9  
(b) 6 9  
(c) 6 8  
(d) 7 8
- (ix) `double y = Math.floor(5.8) + Math.round(4.3);`  
What is the value of y?  
(a) 9.0  
(b) 10.0  
(c) 8.0  
(d) 11.0
- (x) `int marks[][] = { {12, 15, 18}, {10, 14, 16}, {20, 18, 12} };`  
What is the result of `marks[0][1] + marks[2][2]`?  
(a) 30  
(b) 33  
(c) 27  
(d) 32
- (xi) What is the output of the following code?  
`String str = " OpenAI GPT ";`  
`System.out.println(">" + str.trim() + "<");`  
(a) > OpenATGPT <  
(b) >OpenAI GPT<  
(c) > OpenAIGPT <  
(d) > OpenAIGPT<
- (xii) Which of the following is the wrapper class for the data type int?  
(a) Integer  
(b) Int  
(c) Float  
(d) Double
- (xiii) `int[] arr = {1, 2, 3};`  
`System.out.println(arr[5]);`  
What will happen when this program code is executed?  
(a) It will print 5  
(b) It will print 3  
(c) It will throw a runtime error  
(d) It will compile-time error

- (xiv) In a cinema hall, the staff checks each row and within each row, they check each seat to ensure it is clean. This situation represents which programming concept?
- (a) Arrays
  - (b) Nested loop
  - (c) Switch-case
  - (d) Inheritance
- (xv) How many memory cells are created?  
`long data[][] = new long[2][7];`
- (a) 9
  - (b) 14
  - (c) 7
  - (d) 2
- (xvi) What is the output of the following code?  
`System.out.println((3 + 2 > 4) && (6 / 2 == 3));`
- (a) true
  - (b) false
  - (c) 5
  - (d) 6
- (xvii) `String A = "30", B = "40";`  
`int x = Integer.parseInt(A);`  
`int y = Integer.valueOf(B);`  
`System.out.println("" + x + y);`
- (a) 3040
  - (b) 70
  - (c) "70"
  - (d) 30 40
- (xviii) Which of the following is a primitive data type in Java?
- i. int
  - ii. String
  - iii. char
  - iv. class
- (a) i and iv
  - (b) i and ii
  - (c) only i
  - (d) i and iii
- (xix) `double d = 9.78;`  
`int x = (int) d;`  
`double y = x;`  
`System.out.println(x + y);`  
What will be the output?
- (a) 19.78
  - (b) 18.0
  - (c) 9.78
  - (d) 10.0

(xx) Which of the following will give a compilation error?

- (a) `int arr[] = new int[5];`
- (b) `int arr[] = {1, 2, 3};`
- (c) `int arr[] = new int[];`
- (d) `int arr[];`

**Question2**

(i) `String s1 = "butterfly";` **[2]**

`String s2 = "caterpillar";`

`int idx = s2.indexOf('p');`

`System.out.println(s1.substring(3,7).concat(s2.substring(idx)));`

`System.out.println(s2.toUpperCase());`

(ii) Convert the following code into an equivalent if-else statement: **[2]**

`int num = 15;`

`int output = (num % 3 == 0) ? num * 3 : num - 2;`

(iii) Find the maximum of the absolute values of A and B using the Math class. **[2]**

(iv) What is the value of t of the following code snippet ? **[2]**

`int p = 4, q = 3, s = 2, t;`

`t = ++p * q-- - --s + p++;`

(v) Write the output: **[2]**

`int arr[] = {5, 10, 15, 20, 25};`

`int s = 0;`

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

`s += arr[i];`

`System.out.println(s);`

(vi) Analyze the following program segment and answer the questions that follow: **[2]**

`String word = "RABBIT";`

`for(int i = 0; i < word.length(); i++)`

`{`

`if(word.charAt(i) == 'B')`

`continue;`

`System.out.print(word.charAt(i));`

`}`

i) Write the output of the above program segment.

(ii) How many times does the body of the loop get executed?

(vii) Write the equivalent Java expression for

$$\frac{2\sqrt{m} - 3}{n^3}$$

[2]

(viii) class Employee

[2]

```
{
 int salary;
 Employee()
 {
 salary = 5000;
 }
 Employee(int s)
 {
 salary = s;
 }

 void increment(int amount)
 {
 salary += amount;
 }
 void display()
 {
 System.out.println(salary);
 }
 public static void main(String[] args)
 {
 Employee e1 = new Employee();
 e1.increment(1500);
 e1.display();

 Employee e2 = new Employee(7000);
 e2.increment(1000);
 e2.display();
 }
}
```

What is the output of the above program?

(ix) String state[] = {"KERALA", "ASSAM", "BIHAR", "ODISHA"}; [2]

```
System.out.println(state[1].length() < state[0].length());
```

```
String w = state[2];
w = w.replace("B", "");
w = w.replace("R", "");
System.out.print(w);
```

(x) int p; [2]

```
for(p = 2; p < 10; p += 3)
```

```
 System.out.print(p);
```

```
System.out.println(p);
```

Convert the above code to while loop.

### SECTION-B

(Answer **any four** questions from this section)

*The answers in this section should consist of the program either BlueJ environment or any program environment with java as the base.*

*Each program should be written using variable description/mnemonic codes so that the logic of program is clearly depicted.*

*Flowcharts and algorithms are not required.*

#### **Question-3**

[15]

Define a class *OnlineCourse* to compute the total fee for an online learning program.

The details of the class are given below:

#### **Member Variables:**

int studentID – to store the student’s identification number

int hours – to store the total number of learning hours purchased

double fee – to store the total course fee

#### **Member Methods:**

void accept()

This method should input the values of studentID and hours using the Scanner class.

void calculate()

This method should compute the total fee based on the number of hours purchased using the following rate chart:

| Hours Purchased | Rate per Hour (Rs) |
|-----------------|--------------------|
| First 10 hours  | 200                |
| Next 20 hours   | 180                |
| Above 30 hours  | 150                |

void display()

This method should display the studentID, the total hours purchased, and the calculated fee.

Write a **main method** create an **object** of the class and **invoke** the methods of the class with respect to the object.

#### **Question 4**

[15]

Define a class to accept a string and check whether it is a *Twin Letter String* or not. A string is called a *Twin Letter String* if it contains at least one pair of identical consecutive letters (like *tt*, *ss*, *pp*, etc.).

The program should input a word, check for any such twin pair, and display whether the string is a Twin Letter String.

Sample Input:

Enter a word: Butter

Sample Output:

Word: Butter

Twin Letter Found: tt

Result: It is a Twin Letter String

#### **Question 5**

[15]

Write a Java program to accept elements of a  $4 \times 4$  integer array.

a) Print the array in its original form.

b) Print the *mirror image* of the array, where each row is reversed.

*Sample Input:*

1 3 5 7

2 4 6 8

7 5 3 1

8 6 4 2

*Sample Output:*

Original Array:

1 3 5 7

2 4 6 8

7 5 3 1

8 6 4 2

Mirror Image:

```
7 5 3 1
8 6 4 2
1 3 5 7
2 4 6 8
```

### Question6

[15]

Define a **class** overload the method **perform()** as follows:

i. void perform()

This method should display the following number pattern using nested loops:

```
1 2 3 4
2 3 4 5
3 4 5 6
4 5 6 7
```

ii. void perform(int n)

This method should generate and display the first  $n$  terms of the series:

7, 15, 31, 63, 127, ...

### Question7

[15]

Write a Java program to check whether an entered number is a special number or not. A number is called special if the reverse of its square is divisible by the number itself. The program should accept a positive integer from the user, compute and print the square of the number, reverse the digits of the square and print the reversed number, and finally print "Special? Yes" if the reversed number is divisible by the original number, otherwise print "Special? No".

Sample Input:48

Sample Output:

Square: 2304

Reversed square: 4032

Special?Yes

**Question 8**

**[15]**

Define a class to accept 10 capital characters from the user into a single-dimensional array. Sort the array in ascending order using the Bubble Sort technique and print the array before sorting and after sorting.

Sample Input:

D A H B Z N P S W Y

Sample Output:

Array before sorting: D A H B Z N P S W Y

Array after sorting: A B D H N P S W Y Z



Scan to access our Virtual Question Bank

### PRE-BOARD EXAMINATION YEAR 2025-26

Maximum Marks – 100

Subject – Computer Applications (Theory)

Time - 2 Hours

*This paper is divided into **two** Sections.*

*Attempt **all** questions from **Section A** and **any four** questions from **Section B**.*

*The intended marks for questions or parts of questions are given in brackets [ ].*

### Section A (40 Marks)

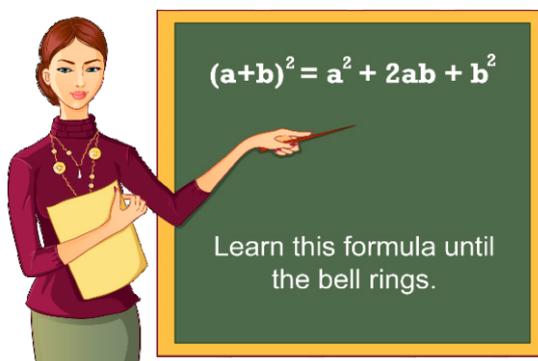
*(Attempt **all** questions from this **Section**.)*

#### Question 1

[20]

Choose the correct answers to the questions from the given options. (Do not copy the question, Write the correct answer only.)

(i) Name the appropriate programming construct used by the teacher in the following picture.



- (a) do-while      (b) while      (c) for      (d) if-else

(ii) System.out.print(20 + 50 + "70"); will print:

- (a) 140      (b) 7070      (c) 20120      (d) 205070

(iii) Which of the following is not allowed in Java?

|                            |                                                     |
|----------------------------|-----------------------------------------------------|
| 1. Constructor overloading | 2. 'switch' variable of type 'double'               |
| 3. Keywords in upper case  | 4. Declaring global variables outside of any method |

- (a) Only 1      (b) 2 and 3      (c) 3 and 4      (d) 1 and 4

(iv) The output of System.out.println("CHATBOT".compareTo("CHAT")) is:

- (a) BOT      (b) 3      (c) - 1      (d) false

(v) Float var = 25.9f; - This statement is a proper example of:

- (a) Wrapper class assignment      (b) Variable initialisation      (c) AutoBoxing      (d) Syntax error

(vi) A method with the return data type 'void' is certainly a/an \_\_\_\_\_ method.

- (a) Library      (b) Pure      (c) Impure      (d) Class

(vii) The array `int a[ ][ ] = {{5, 6, 2}, {8, 0, 3}, {3, 4, 1}}` occupies \_\_\_\_\_ bytes:

- (a) 16      (b) 36      (c) 64      (d) 288

(viii) Variables declared at the class level without the keyword 'static' are:

- (a) Member variables      (b) Instance variables      (c) Non-static variables      (d) All of these

(ix) The keyword used to access the members of another package is:

- (a) object      (b) import      (c) public      (d) static

(x) `Task myTask = new Task();` - Here **myTask** is a/an:

- (a) Class      (b) Object      (c) Constructor      (d) Object reference variable

(xi) Consider the array given below:

```
char alpha[] = {'D', 'I', 'G', 'I', 'T', 'A', 'L'};
```

Mention the output of the statement: `System.out.println(++alpha[2]);`

- (a) G      (b) H      (c) I      (d) 72

(xii) Assertion (A): When two or more loops are defined in a program, it is said to be nested loop.

Reason (R): In a nested iterative structure, the inner loop gets executed for each of the outer loop executions.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A)

(c) Assertion (A) is false and Reason (R) is true

(d) Assertion (A) is true and Reason (R) is false

(xiii) How many times will the following loop execute?

```
for (int r = 1; r > 1; r--)
```

```
System.out.println(r);
```

- (a) 1      (b) 0      (c) Infinite      (d) Syntax error

(xiv) Which of the following methods returns a boolean value?

- (a) equals()      (b) trim()      (c) compareTo()      (d) charAt()

(xv) Predict the output of: `(int)(Math.cbrt(512) + Math.pow(-64, 1/3));`

- (a) 9      (b) 64      (c) 8      (d) 12

(xvi) Assertion (A): The use of 'default' case in a 'switch' construct is optional.

Reason (R): Statements under 'default' case are executed only if none of the case labels becomes identical to the value of 'switch' variable.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)

(c) Assertion (A) is true and Reason (R) is false

(d) Assertion (A) is false and Reason (R) is true

(xvii) Identify the incorrect return statement:

- (a) return 0;    (b) return (x);    (c) return (x, y);    (d) return;

(xviii) State the type of loop in the given program snippet:

```
int a = 1;
while (true)
 a++;
```

- (a) Fixed loop    (b) Null loop    (c) Finite loop    (d) Infinite loop

(xix) The 'protected' access specifier of a class member allows access:

- (a) From anywhere  
 (b) Only within the same class  
 (c) Only within the same package  
 (d) Within the same package and subclasses defined within another package

(xx) Consider the following code snippet in which some statements (marked by Line 1, Line 2, Line 3 and Line 4) are jumbled. Choose the appropriate order of statements to print the total number of proper factors of a number stored in 'num'.

```
int i = 1, c = 0;
while(i<num)
{
 c += 1; //Line 1
 if(num % i == 0) //Line 2
 System.out.println(c); //Line 3
}
i += 1; //Line 4
```

- (a) (2) (4) (3) (1)    (b) (2) (1) (4) (3)    (c) (3) (2) (1) (4)    (d) (4) (3) (2) (1)

## Question 2

(i) Write a Java statement to find the minimum of  $x^y$  and  $y^x$  using the methods of **Math** class. [2]

(ii) Evaluate the following expression when  $c = 2$ : [2]

$c -= --c / c++ - ++c;$

(iii) Convert the following 'while' loop into a 'for' loop in such a way that, all the constants used in the code snippet and the output remain unchanged: [2]

```
int i = 1;
while(++i<=10)
{
 System.out.println(i);
}
```

(iv) Predict the output of the following code fragment: [2]

```
String s1 = "100.78";
String s2 = "200";
int a1 = (int)Double.parseDouble(s1);
int a2 = Integer.valueOf(s2);
System.out.println(a1+a2);
```

(v) Write down two features of constructors.

(vi) Consider the following program and predict the output (show working):

```
public class Galaxy
{
 private int spin = 97;
 private String volume = "Medium";
 Galaxy()
 {
 System.out.println("Extreme axial tilt");
 }
 Galaxy(int angle, String size)
 {
 spin = angle;
 volume = size;
 }
 void show()
 {
 System.out.println("Inclination Angle: "+spin);
 System.out.println("Volume: "+volume);
 }
 public static void main(String args[])
 {
 Galaxy uranus = new Galaxy();
 uranus.show();
 Galaxy mars = new Galaxy(25, "Small");
 mars.show();
 }
}
```

(vii) Analyse the following iterative structure and answer the questions with working:

[2]

```
String x = "INTELLIGENCE";
for(int i=0;i<x.length();i++)
{
 if(i%2==0)
 continue;
 System.out.println(x.charAt(i));
}
```

(a) How many times will the loop get executed?

(b) What will be the output?

(viii) Write two differences between Binary search and Linear search.

[2]

(ix) Edwin, a student of standard X wants to compute the sum of all the integers stored in an array **ar[ ]**.

Hence, he has written the following code which is not producing a result. Specify the **type of the error** in the following code, **rectify** it and write the **rectified version** of the code:

[2]

```
int s = 0;
for(int i=0; i<=ar.length; i++)
{
 s = s + ar[i];
}
System.out.println("Sum of the integers = "+s);
```

(x) Consider the array given below and predict the output of the following statements:

String house[] = {"PHOENIX", "WYVERN", "PEGASUS", "GRIFFIN"};

(a) System.out.println(house[3].substring(0,4).concat(house[1].substring(3)));

(b) System.out.println(house[0].indexOf('X')+"\*\*"+house[2].indexOf('S'));

### Section B (60 Marks)

(Answer **any four** questions from this **Section**.)

*The answers in this section should consist of the programs in either BlueJ environment or any program environment with java as the base.*

*Each program should be written using variable description / mnemonic codes so that the logic of the program is clearly depicted.*

*Flowcharts and algorithms are not required.*

#### Question 3

Define a class **Stream\_Allocation** for ISC curriculum in a school with the following specifications: [15]

**Class name** : **Stream\_Allocation**

**Member variables / Data members:**

String name : to store the name of the student  
 String uid : to store the Unique ID of the student  
 int age : to store the age of the student  
 double pmarks : to store the percentage marks obtained by the student  
 String stream : to store the stream allocated to the student

**Member methods:**

void inputDetails() : to input and store the name, Unique ID, age and percentage of marks  
 void allocation() : to allocate the stream as per the criteria given below:

| Percentage of marks          | Stream                    |
|------------------------------|---------------------------|
| 70 or above                  | Science with Robotics     |
| 60 or above but less than 70 | Commerce with Animation   |
| 50 or above but less than 60 | Humanities with Geography |
| Less than 50                 | NOT ELIGIBLE              |

void getStream() : to display all information with proper messages in separate lines.

Now define a main() method to create an object and invoke the above member methods for obtaining the desired output.

#### Question 4

Define a class to accept two words of similar length, convert those into upper case and form a new string in such a way that, the first character of the first word is followed by the first character of the second word. But all vowels of the first word will be replaced by '#' and all vowels of the second word will be replaced by '%' in the output string. Now display both the input words and the output string with proper messages. [15]

**Example:** Input: First word – LION Second word – KING

Output: Output string – LK#%#NNG

#### Question 5

Design a class to accept any 10 lower case letters of English alphabet in a Character array without maintaining any sequential order and arrange those letters in alphabetical order using the technique of **Selection sort**. Now display the sorted letters of the array with an appropriate message. [15]

#### Question 6

Design a class to accept values in a 4x4 integer array. Now separately calculate the sum of all the numbers contained in each diagonal of the array. Display both the results in separate lines along with proper messages. [15]

Example:

|    |    |    |    |
|----|----|----|----|
| 10 | 4  | 6  | 3  |
| 4  | 0  | 14 | 4  |
| 2  | 5  | 6  | 15 |
| 20 | 51 | 12 | 8  |

Sum of all the numbers in left diagonal:  $10 + 0 + 6 + 8 = 24$

Sum of all the numbers in right diagonal:  $3 + 14 + 5 + 20 = 42$

#### Question 7

Define a class to overload a method **numbersPlay()** for the following purposes: [15]

int numbersPlay(int p, int q) : To return the sum of all even numbers within the range of **p** and **q** (both inclusive).

int numbersPlay(int num) : To return the frequency of digit '7' in the number **num**.  
Example: Frequency of digit '7' in the number 7073 is 2.

void numbersPlay(char ch) : To print the following pattern up to 5 rows.

Example: If ch = '@', the pattern will be:

```
1
2 @
3 @ 3
4 @ 4 @
5 @ 5 @ 5
```

**Question 8**

An 'Oddtastic number' is a natural number where all of its individual digits are odd. Design a class to accept a natural number, verify whether the number is an 'Oddtastic number' or not and display the results accordingly. [15]

**Example:**

The number **3795** is an Oddtastic number as all of its digits are odd.

The number **295** is not an Oddtastic number as it contains the digit '2' which is an even digit.

**\*\*\*END OF QUESTION PAPER\*\*\***

# Question Paper 26

ASSOCIATION OF ODISHA ICSE SCHOOLS

ICSE MODEL EXAMINATION – 2026

COMPUTER APPLICATIONS

Maximum Marks: 100

Time Allowed: Two hours

Answer to this paper must be written on the paper provided separately.

You will **not** be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this paper is the time allowed for writing the answers.

This paper is divided into two Sections.

Attempt all questions from Section A and any four questions from Section B.

The intended marks for questions or parts of questions are given in brackets [ ].

## SECTION A (40 Marks)

(Attempt all questions from this Section)

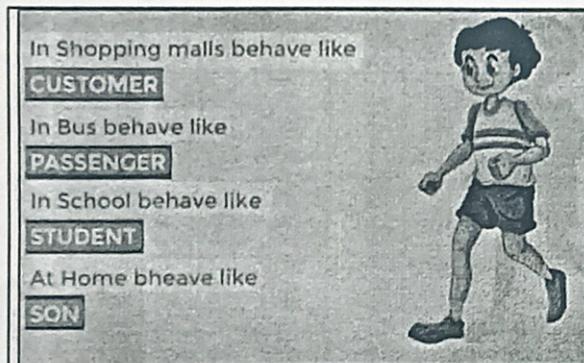
### Question 1.

Choose the correct answers to the questions from the given options.

[20]

(Do not copy the questions, write the correct answers only.)

(i)



Name the feature of java depicted in the above picture:

- (a) polymorphism      (b) encapsulation      (c) inheritance      (d) abstraction
- (ii) A mechanism where one class acquires the properties of another class:  
(a) polymorphism      (b) inheritance      (c) abstraction      (d) encapsulation
- (iii) What will `Math.sqrt(Math.ceil(15.3))` return?  
(a) 16.0      (b) 16      (c) 4.0      (d) 4
- (iv) State the type of loop in the given program segment:  
`for (int I=5; I! = 0; I-=2)  
System.out.print(I);`  
(a) null      (b) fixed      (c) finite      (d) infinite
- (v) The output of the code segment:  
`System.out.println("EXAMINATION". substring (2,7))` is:  
(a) AMINA      (b) XAMINA      (c) AMINAT      (d) AMINATION
- (vi) A data type which contains integer as well as fractional part and occupies 32 bits space is:  
(a) float      (b) char      (c) double      (d) byte
- (vii) The Math class is a part of which java library package.

(a) java.util

(b) java.io

(c) java.random

(d) java.lang



(viii) Which of the following statement terminates the complete execution of a loop?

(a) System.exit(0)

(b) break

(c) continue

(d) return

(ix) Name the type of error in the statement given below:

```
double a;b;c;
```

(a) runtime error

(b) logical error

(c) syntax error

(d) no error

(x) A \_\_\_\_\_ method needs to be called with the help of an object.

(a) static

(b) void

(c) class

(d) non-static

(xi) Math.pow(625,0.5) + Math.sqrt(144) will return:

(a) 17.0

(b) 13.0

(c) 13

(d) 37.0

(xii) The Scanner class is a \_\_\_\_\_ class.

(a) super

(b) derived

(c) wrapper

(d) predefined

(xiii) Consider the code given below:

```
Double obj = new Double(6.55);
```

What is the term for converting the primitive type to its wrapper class object?

(a) unboxing

(b) boxing

(c) type casting

(d) mutation

(xiv) Corresponding wrapper class of float data type is:

(a) float

(b) Float

(c) Floats

(d) FLOATS

(xv) The String class method to join two strings is:

(a) Concat()

(b) <string>. join(string)

(c) concat(char)

(d) concat(string)

(xvi) Consider the following program segment and select the output of the same when n=10:

```
switch (n)
```

```
{
```

```
case 10: System.out.println(n*2);
```

```
case 4: System.out.println(n*4); break;
```

```
default: System.out.println(n);
```

```
}
```

(a) 20

(b) 10

(c) 40

(d) 20

40

4

(xvii) The index(subscript) of the last element of an array arr[] is:

(a) arr.length()

(b) arr[].length-1

(c) arr.length()-1

(d) arr.length-1

(xviii) What will be the output of the following code segment?

```
System.out.print("LUCKNOW". substring(3));
```

(a) LUCK

(b) KNOW

(c) CKNO

(d) CKNOW

(xix) Assertion(A) : In OOP, data abstraction helps in reducing complexity.

Reason(R) : It hides the implementation details and shows only necessary features.

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

(c) A is true, But R is false

(d) A is false, but R is true

(xx) Assertion(A) : A for loop can never executes, if the condition is false initially.

Reason(R) : A for loop is an exit-controlled loop.

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

- (c) A is true, But R is false
- (d) A is false, but R is true

[2]

**Question 2.**

(i) Write the java expression for:

$$\frac{|x + y|}{\sqrt{x^2 + y^2}}$$

[2]

(ii) Evaluate the expression, when x is 4:

```
x+=x++*++x%2
```

[2]

(iii) Give the output of the following String class methods:

- (a) "COMMENCEMENT".lastIndexOf('M');
- (b) "devote".compareTo("DEVOTE");

[2]

(iv) Do as directed:

- (a) Name the package that contains wrapper classes.
- (b) Write the return data type of the function: endsWith()

[2]

(v) Consider the following two-dimensional array and answer the questions given below:

```
int mat[][]={{1,2,3},{4,5,6},{7,8,9},{10,11,12}};
```

- (a) What is the order of the array ?
- (b) What is the value of mat[1][0] + mat[2][1] ?

[2]

(vi) Rewrite the following program segment using for loop:

```
int a=10, b=20;
do
{
 a++;
 b++;
} while(a<=20);
System.out.println(a*b);
```

(vii) Write a java statement for creating an object named 'mock' of the class 'exam' which takes three character parameters.

[2]

(viii) Give the output of the following code:

```
String A="26", B="100"; String C=A+B+"200";
int x = Integer.parseInt(A);
int y = Integer.parseInt(B);
int D = x+y;
System.out.println ("Result 1 =" +C);
System.out.println ("Result 2 =" +D);
```

[2]

(ix) Write the prototype of a function check, which takes an integer argument and returns a character.

[2]

(x) Re-write the following code using ternary operator ( ? : )

```
int m=400; double ch;
if(m>300)
 ch=(m/100) *2;
else
 ch=(m/20.0)-2;
```

[2]



[15]

**Question 6.**

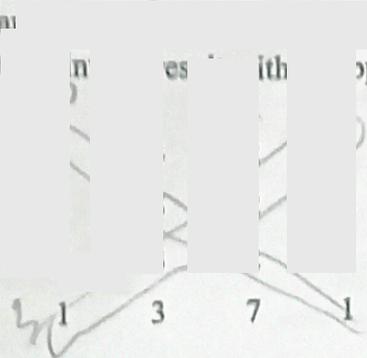
Define a class to accept values into an array of double data type of size 20. Accept a double type value from user and search in the array using Linear Search method. If value is found display message "Found in the position number: " with its position where it is present in the array. Otherwise display message "Not found".

**Question 7.**

Define a class to accept integer values into an array of order 4 x 4 and check whether it is a **DIAGONAL** array or not. An array is said to be a diagonal array if the sum of the left diagonal elements is equal to the sum of the right diagonal elements. Appropriate message should be displayed.

[15]

Example:  
Input:



30. 21 12 03

Output:

Sum of the left diagonal elements = 11  
Sum of the right diagonal elements = 11  
The array is DIAGONAL

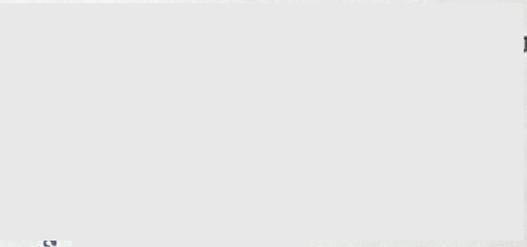
**Question 8.**

Define a class to accept a string (word) and print the number of digits, letters and special characters in the accepted string.

[15]

Example:

Input : s= "AbhishekSharma@2025"  
Output : Number of digits = 4  
Number of letters = 14  
Number of special characters = 1



\*\*\*\*\*

Shri Vile Parle Kelavani Mandal's  
C.N.M. School & N.D. Parekh Pre-Primary School

|       |           | PRELIMINARY EXAMINATION<br>2025 -26 | TIME    | MAX<br>MARKS |
|-------|-----------|-------------------------------------|---------|--------------|
| CLASS | DATE      | COMPUTER APPLICATION                | 2 hours | 100          |
| X     | 13.1.2026 |                                     |         |              |

Number of printed page = 6

Answer to this Paper must be written on the paper provided separately.  
You will not be allowed to write during the first 15 minutes.  
This time is to be spent in reading the question paper.  
The time given at head of this Paper is the time allowed for writing the answers.

This paper is divided into two Sections.  
Attempt all questions from Section A and any four questions from Section B.  
The intended marks for questions or parts of questions are given in brackets [ ].

**SECTION A**

[20]

Question 1. Choose the correct answer and write the correct option. +2

- (i) The number of bytes occupied by a character array of four rows and three columns are:  
(a) 12 (c) 48  
(b) 24 (d) 96
- (ii) What is the correct syntax to access a member variable of an object?  
(a) className.variableName (c) objectName : variableName  
(b) objectName.variableName (d) new.variableName
- (iii) A method which does not modify the value of variables is termed as:  
(a) Impure method (c) Primitive method  
(b) Pure method (d) User defined method
- (iv) Assertion: In Java, int and Integer are the same.

Reasoning: int is a primitive data type, while Integer is a wrapper class that encapsulates the int type as an object.

- (a) Both Assertion and Reasoning are true, and Reasoning is the correct explanation of Assertion.  
(b) Both Assertion and Reasoning are true, but Reasoning is not the correct explanation of Assertion.  
(c) Assertion is false, but Reasoning is true.  
(d) Assertion is true, but Reasoning is false.
- (v) Invoking a method by passing the objects of a class is termed as:  
(a) Call by reference (c) Call by method  
(b) Call by value (d) Call by constructor
- (vi) The output of the given statements is  
String str="Fantastic";  
System.out.println(str.substring(str.length()%4,5));



- (xvi) String a[]={"Snapchat","Spotify","Google TV","Pinterest","Google"};  
 System.out.println(a[2].compareTo(a[4]));  
 (a) 3 (c) 32  
 (b) 4 (d) -32
- (xvii) System.out.println("I said,\"It's wise to obey elders.\");  
 The output of the above statement is:  
 (a) I said,'It is wise to obey elders.'  
 (b) I said, "It's wise to obey elders."  
 (c) I said,It's wise to elders.  
 (d) "It's wise to obey elders."
- (xviii) The output of the statement System.out.println(Math.pow(Math.max(Math.floor(5.7),4),2));  
 (a) 16.0 (c) 16  
 (b) 36.0 (d) 25.0
- (xix) The extension of a Java source code file is:  
 (a) Exe (c) Jvm  
 (b) Obj (d) java
- (xx) The \_\_\_\_\_ keyword forces the control to come out from the function definition body.  
 (a) System.exit(0) (c) return  
 (b) break (d) continue

Question 2.

- (i) Write the java expression for:  $\frac{|a + b|}{\sqrt{a^2 + b^2}}$  [2]
- (ii) Find the output of the following statements: [2]  

```
int m[][] = new int[2][2];
int count = 1;
for (int i = 0; i < 2; i++) {
 for (int j = 0; j < 2; j++) {
 m[i][j] = count;
 count++;
 }
}
System.out.println(m[1][1]);
```
- (iii) Write the Java statement for creating an object named 'AI' of the class 'Robotics', which takes two whole numbers as parameter. [2]
- (iv) Give the output of the following program segment: [2]  

```
void encode()
{
 String s="DICE";
 char ch;
 for(i = 0;i < 4; i++)
 {
 ch=s.charAt(i);
 if("AEIOUaeiou".indexOf(ch)>=0)
 System.out.println("@");
 else
 System.out.println(ch);
 }
}
```

Predict the output of the following :

```
String ts="ALL PROBLEMS SOLVED";
String rs=ts.substring(ts.indexOf('P'));
String vs=rs.substring(rs.lastIndexOf('S'));
ts=(ts.concat(vs)).concat(rs);
System.out.println("TS = "+ts);
```

[2]

- (vi) Consider the following two-dimensional array and answer the questions given below:

```
int X[][] = {{2,4,5,6}, {5,7,8,1}, {34, 1,10,9}};
```

- (a) What is the position of 34?  
(b) What is the result of  $X[2][3]+x[1][2]$ ?

- (vii) Rewrite the following do while program segment using for:

```
int x = 10;
int y = 20;
do
{
 x++;
 y++;
} while (x<=20);
```

System.out.println(x \* y);

- (viii) What will be the output of the following code?

```
for(int x=10,m=20;y=1;y<3;y+=1)
{
 x*=10;
 m-=5;
 System.out.println("y="+y);
 System.out.println("x="+x);
 System.out.println("m="+m);
}
```

- (ix) Give the output of the following program segment and specify how many times the loop is executed.

```
String s = "COMPUTER";
for(int i=1;i<s.length();i+=2)
System.out.println(s.substring(i));
```

- (x) Rewrite the given code using the conditional operator:

```
if(year%4==0&&year%100!=0||year%400==0)
 leap=true;
else
 leap=false;
```

### SECTION B

(Answer **any four** questions from this **Section**.)

The answers in this section consist of the programs in either BlueJ environment or any program environment with java as the base.

Each program should be written using variable description / mnemonic codes so that the logic of the program is clearly depicted.

Flowcharts and algorithms are not required.

[15]

#### Question 3. - 11

A public library issues books, which a student can use for 7 days without any fine, while returning the book a fine will be charged only for excess days, if returned after specified days.

Design a class Library with the following specifications:

**Class name :** Library

**Member variables / Data members:**

- bname - to store the name of the book issued.
- days - to store the number of days taken to return the book.
- extra - to store the extra days after the specified days.
- fine\_amount - to store the amount to be paid as fine.

**Member methods:**

- void input() - to input the name of the book and the number of days taken to return the book.
- void computeFine() - to compute the extra days taken to return the book and calculate the fine amount only for extra days as per the given slabs:

| Extra days    | Charge per day |
|---------------|----------------|
| Upto 5 days   | ₹5             |
| 6 to 15 days  | ₹10            |
| Above 15 days | ₹20            |

void display() - to display the name of the book, extra days taken to return and the fine amount.

Define a main() method to create an object and invoke the above member methods for obtaining the desired output.

#### Question 4. - 14

Define a class to accept a String and Print if it is a Perfect string or not. A String is Perfect if the number of letters are equal to the number of digits.

Example : "Pass@1234"

Number of letters - 4  
 Number of digits - 4  
 String is a Perfect String

Example : AI\_Chat\_5

Number of letters = 6  
 Number of digits = 1  
 String is NOT a Perfect String

[15]

#### Question 5.

Define a class to accept a four-digit number and check if it is a USHWA number or not. The number is said to be USHWA. Accept a four-digit number.

If:

Sum of all digits =  $2 \times$  (sum of first and last)

[15]

Example 1:  $n = 1234$   
 Sum of first and last digit =  $1 + 4 = 5$   
 Sum of all digits =  $1 + 2 + 3 + 4 = 10$

[15]

**Question 6.**

Define a class to overload the method `print()` as follows:  
`void print()` – To print the given format using nested loops.

@  
 @#  
 @#@  
 @#@#  
 @#@#@

`void print(int n)` – Print the following series: A,C,E,G..... n terms.

`int print(char ch1, char ch2)` – compare the two characters and return the ASCII code of the largest character.

**Question 7.**

Write a program to accept the integer elements of a 2D array of order  $M \times M$ . Print all the elements in matrix format. Also print the product of elements of each column.

[15]

Example:

INPUT: Enter the order of the square matrix - M: 3

Enter the elements of the matrix:    1 2 3  
                                                   4 5 6  
                                                   7 8 9

OUTPUT: Original Matrix:

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

Product of elements of each column:

Column 1 = 28

Column 2 = 80

Column 3 = 162

**Question 8.**

[15]

Write a program to store the names of any 10 elements of the Periodic table in the string type array along with their atomic number in an integer array. Sort the element in Descending order of their atomic number using Bubble Sorting technique and display the names of elements along with their atomic number after sorting.

For example:

**Input**

Array1: Ca Fe Li Na(elements of the periodic table)

Array2: 20 26 3 11(corresponding atomic number)

**Output:**

Sorted elements in DESCENDING order of atomic number:

Fe 26

Ca 20

Na 11

Li 3

**\* Best of Luck \***



ICSE ACADEMY



# Question Paper 28

Lagdu Singh Charitable Trust's (Regd.)

## THAKUR INTERNATIONAL SCHOOL

### SECOND PRELIMINARY EXAMINATION 2025-26

Paper: Computer Applications

Grade: 10

Marks: 100

Date: 20/01/2026

Time : 2 hrs

*Answer to this paper must be written on the paper provided separately.*

*You will **not** be allowed to write during the first 15 minutes.*

*This time is to be spent in reading the question paper.*

*The time given at the head of this paper is the time allowed for writing the answers.*

---

---

*Attempt **all** questions from section A and attempt any **four** questions from section B.*

*The intended marks for questions or parts of a question are given in the brackets [ ]*

---

---

#### SECTION A

*(Attempt all questions from this Section.)*

#### Question 1

Choose the correct answer and write the correct option.

[20]

(Do not copy the question, write the correct answers only.)

i) Output of the following statement:

```
System.out.println("Character.toUpperCase('I'));
```

- a) I                      b) 0                      c) true                      d) false

ii) Default initial value to float:

- a) 0.0                      b) 0.0f                      c) 0f                      d) 0

iii) What is the output of the following code:

```
for (int a = 2; a <= 8; a+=2)
```

```
{
```

```
 System.out.print (a + 2);
```

```
}
```

- a) 2468                      b) 268                      c) 46810                      d) 26810

iv) Conversion of Integer to int, Float to float, Long to long, etc. is known as:

- a) Autoboxing                      b) Unboxing                      c) Implicit conversion                      d) Explicit conversion

v) \_\_\_\_\_ feature of OOPs allows a class to use the properties and methods of another class.

- a) Polymorphism                      b) Encapsulation                      c) Inheritance                      d) Abstraction
- 
-

vi) Assertion: Boxing is the process of converting a primitive data type to its corresponding wrapper class object.

Reason: Unboxing is the process of converting a wrapper class object to its corresponding primitive data type.

- a) Both the assertion and reason are correct, and the reason is the correct explanation of the assertion.
- b) Both the assertion and reason are correct, but the reason is not the correct explanation of the assertion.
- c) The assertion is correct, but the reason is incorrect.
- d) The assertion is incorrect, but the reason is correct.

vii) Assertion: In Java, arrays have a fixed size that is determined at the time of their creation and cannot be changed.

Reason: Arrays in Java are implemented as a contiguous block of memory, and the size of the memory block is fixed.

- a) Both the assertion and reason are correct, and the reason is the correct explanation of the assertion.
- b) Both the assertion and reason are correct, but the reason is not the correct explanation of the assertion.
- c) The assertion is correct, but the reason is incorrect.
- d) The assertion is incorrect, but the reason is correct.

viii) What is the final value stored in variable k?

```
double k=Math.ceil(Math.abs(-3.14));
System.out.print(k);
```

- a) 3
- b) 3.00
- c) 4
- d) 4.00

ix) Multiple Constructors having different signatures is termed as:

- a) Function Overloading
- b) Default Constructor
- c) Constructor overloading
- d) Copy constructor

x) The method to check if a character is in Uppercase or not is:

- a) isLetter(char)
- b) isAlpha(char)
- c) isUpper(char)
- d) isUpperCase(char)

xi) What is the output of the following code:

```
short x=32767;
x++;
System.out.print(x);
```

- a) 32768
- b) 32767
- c) -32768
- d) -32767

xii) An array  $a[] = \{ 1, 2, 3, 4, 5, 6 \}$  is given. What will be the result of  $a[2] + 1 + a[4-1]$ ?

- a) 6
- b) 7
- c) 8
- d) 9

- iii) The library method `equalsIgnoreCase()` returns
- a) int                                      b) boolean                                      c) char                                      d) string
- xiv) Any array allows you to store elements with \_\_\_\_\_ data type only.
- a) float                                      b) long                                      c) int                                      d) same
- xv) `int a = 'a';` what is the value of a?
- a) 97                                      b) 65                                      c) 96                                      d) 56
- xvi) The element in `a[3 + 1]` of the array `{1, 3, 5, 7, 9, 11, 13}` is :
- a) 7                                      b) 5                                      c) 9                                      d) 1
- xvii) Advantages of using functions:
- a) Reusability                      b) Reduces the complexity                      c) Easy to debug                      d) All the above
- xviii) The access specifier that gives most accessibility is:
- a) private                                      b) protected                                      c) default                                      d) public
- xix) `Math rint(6.5)` results to \_\_\_\_\_.
- a) 6                                      b) 7.0                                      c) 6.0                                      d) 7
- xx) The extension of Java source code file is:
- a) exe                                      b) obj                                      c) jvm                                      d) java

**Question 2**

[20]

- 1) What is the difference between `x = 5` and `x == 5`?
- 2) Name the following:
  - i) A package that is invoked by default.
  - ii) A keyword to use the classes defined in a package.
- 3) What is the value of `i` after the following code snippet executes?
 

```
int i = 17;
System.out.print (i++ + ++i);
```
- 4) Define Infinite loop with an example.
- 5) Evaluate `d`, if `num1 = 5, num2 = 3`

```
d = num1++ + num2++ - num2
```

6) If, String s="Ashish Kumar";

String s1="Computer Teacher";

What do the following functions return for:

- i) System.out.println(s.substring(1,5));
- ii) System.out.println(s.indexOf(s.charAt(4)));
- iii) System.out.println(s1+s.substring(5));
- iv) System.out.println(s.equals(s1));

7) Write the following condition using ternary operator:

If amount is greater than 10000 and less than 50000, the commission is Rs. 7000 else it is 0.

8) What is the significance of default in a switch case?

9) Name the keywords that:

- i) is used for allocating memory to an array.
- ii) causes the control to transfer back to the method call.

10) Mention two different styles of expressing a comment in a program.

### Section B

(Answer any 4 questions from this section)

The answers in this section should consist of the programs in either BlueJ or any program environment with Java as the base.

Each program should be written using variable description /Mnemonic codes so that the logic of the program is clearly depicted.

#### Question 3

An electricity board charges the bill depending on the number of units consumed as follows: [15]

| Units Consumed  | Rate per unit  |
|-----------------|----------------|
| First 100 units | 40 p. per unit |
| Next 200 units  | 60 p. per unit |
| Above 300 units | Re. 1 per unit |

#### Question 4

Write a program to input a string to calculate the total number of characters and vowels present in it and also reverse the string. [15]

#### Question 5

Write a program to display the given series.

12 24 36 48 60 .....n terms

[15]

Write a program to input a sentence and display the toggled sentence.

Input: Welcome to School

Output: wELCOME TO sCHOOL

[15]

### Question 7

Define a class to accept a String and print the number of digits, letters and special characters in the string.

Example: S= "KAPILDEV@83"

Output: Number of digits – 2

Number of letters – 8

Number of special characters – 1

[15]

### Question 8

Define a class to accept 10 characters from the user. Using Bubble Sort technique arrange them in ascending order. Display the sorted array and original array.

[15]

\*\*\*\*\*

---



**PARLE TILAK VIDYALAYA (ICSE)**  
**PRELIMINARY EXAMINATION 2026**  
**COMPUTER APPLICATION**

Std: X  
Date: 08.01.2026

Marks: 100  
Time : 2 hrs

*Answers to this paper must be written on the separate paper.  
You will not be allowed to write during the first 15 minutes.  
The time is to be spent in reading the question paper.  
This paper is divided into two sections.  
Attempt all questions from Section A and any 4 questions from Section B.*

**Section A**

*(Attempt all questions from this section)*

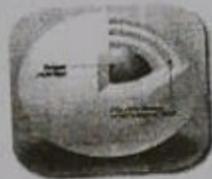
[20]

**Question 1**

Choose the correct answers to the questions from the given options:  
(Do not copy the question, write the correct answers only.)

Question 1:

- i The technique of binding both data and methods together to keep them safe from unauthorized access and misuse.



- a. Abstraction
  - b. Inheritance
  - c. Encapsulation
  - d. Polymorphism
- ii Java can be used to write \_\_\_\_\_.
- a. Stand-alone applications
  - b. Both stand-alone and internet applications.
  - c. Internet applications
  - d. None of these

- iii. Java uses ..... character set.
- ASCII only
  - Extended ASCII only
  - Unicode
  - None of these
- iv. The smallest individual component in a program is called \_\_\_\_\_.
- Token
  - Identifier
  - Keyword
  - Method
- v. Which of the following is not a character literal?
- '\n'
  - "n"
  - 'n'
  - None of these
- vi. The method that changes the state of an object is known as .....
- Pure method
  - Impure Method
  - Perfect Method
  - Imperfect Method
- vii. Identifier is the name given to the
- Variable
  - Class
  - Method
  - All of these
- viii. What will be the output of the following code?
- ```
int a = 7, b = 10;  
while (a++ < --b)  
System.out.print(a + b);
```

- a. 89
- b. 17
- c. 79
- d. 1

ix.



Choose the incorrect statement based on the above given picture:

- a. Array Index of Dragan fruit is [2][1]
 - b. It is a two-dimensional array of 3 rows and 4 columns.
 - c. Pineapple is stored in array index [1][2]
 - d. [1][1] is the array index of Apple.
- x. Which operator cannot be used with if-else statement?
- a. <=
 - b. ||
 - c. &&
 - d. ?:

xi. Case Study: Searching Algorithms

You are tasked with building a program to search for a target number within an array of integers. You decide to implement two searching algorithms: linear search and binary search.

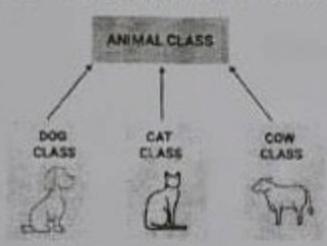
In **binary search (ascending order)**, when should the **right half** of the array be searched?

- a. If the middle element is equal to the target
- b. If the middle element is greater than the target
- c. If the middle element is less than the target
- d. It doesn't matter; binary search always searches both halves

- xii. In a nested loop, If the outer loop has 'm' iterations and the inner loop has 'n' iterations, how many total iterations will be performed?
- m
 - n
 - $m \times n$
 - $m+n$

- xiii. The value returned by Integer.parseInt("-321") is:
- 321
 - 321
 - 321.0
 - "321"

xiv. The 'Cat Class' that is inherited from 'Animal Class' is called _____.



- Parent Class
 - Base Class
 - Super Class
 - Derived Class
- xv. **Assertion (A):** A school timetable represents nested loops in real life.
Reason (R): Each day contains multiple periods, and the timetable repeats for every school day of the week.
- Both (A) and (R) are true and (R) is a correct explanation of (A).
 - Both (A) and (R) are true and (R) is not a correct explanation of (A).
 - (A) is true and (R) is false.
 - (A) is false and (R) is true.

xvi.

1. Family cupboard	2. Phone Password
3. Highways	4. Personal Safe

Which of the following is the real-life example of a private access specifier?

- a. 1 & 2
- b. 1 & 3
- c. 2 & 4
- d. 3 & 4

xvii. **Assertion (A):** equals() and compareTo() methods perform the same task.
Reason (R): equals has a return type of boolean and compareTo() returns integer data type.

- a. Both Assertion (A) and Reason (R) are true and Reason(R) is a correct explanation of Assertion (A).
- b. Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A).
- c. Assertion (A) is true and Reason (R) is false.
- d. Assertion (A) is false and Reason (R) is true.

xviii. The valueOf() method returns the:

- a. String representation of the argument
- b. int representation of the argument
- c. boolean representation of the argument
- d. character representation of the argument

xix. Consider the following program segment in which the statements are jumbled. Choose the correct order of statements to calculate and return the factorial of 4.

```

for (k=1; k<=4; k++) → 1
return fa;           → 2
long fa=1, k;        → 3
fa*=k;               → 4
    
```

- a. 1,2,3,4
- b. 3,1,4,2
- c. 3,1,2,4
- d. 1,3,2,4

xx. Which of the following returns a string?

- a. index(String)
- b. length()
- c. charAt(int)
- d. replace(char, char)

Question 2:

- i. Give the output of the following program segment and specify how many times the loop is executed. [2]
 String s = "ICSE";
 for(i=s.length()-1;i>=0;i-=2)
 System.out.println(s.substring(i));
- ii. a. Name the jump statement that brings the control back to the calling method. [2]
 b. Name the method to convert the lower-case character to upper case character.
- iii. Consider the following array and answer the questions given below: [2]
 int a[] = {12, 10, 8, 4, 6, 2, 3, 15, 7};
 a. What is the output of System.out.print(a[1]+a[5]);?
 b. What is the index (subscript) of the largest element of the array a[]?
- iv. Write Java expression for: *squareroot of (x+y divide by a+b)* [2]
- v.

```
class sample
{ int a,b;
  static int c;
  sample(int a1, int b1, int c1)
  { a=a1;
    b=b1;
    c=c1;
  }
  void compute()
  {
  boolean q=!((a==b) && (b!=c));
  System.out.println (q);
  }
  public static void main()
  { sample ob=new sample(3,8,4);
    ob.compute();
  }
}
```

 [2]

Answer the following based on the above given program code:

- a. Class variables
 - b. Object name
 - c. Constructor name
 - d. Type of constructor
- vi. Give output for the following: [2]
- a. `System.out.print(Math.ceil(7.2)+Math.floor(3.1)+Math.round(3.5));`
 - b. `System.out.print("Musician. compareToIgnoreCase("music"));`
- vii. Convert the given code snippet into if-else statement: [2]
- ```
System.out.print((a%2==0)?"even number":(a%2!=0)? "odd number" :
"Zero");
```
- viii. Mention the return data type and the class in which the method is defined. [2]
- a. `parseDouble(String )`
  - b. `startsWith(String)`
- ix. When the following code segment is executed [2]
- ```
char c[]={ 'a','b','c','d','e'};  
System.out.println(c[0] +c[3]);  
Output is 196
```
- a. State whether the above statement is true or false.
 - b. Support your answer with a proper explanation.
- x. Rewrite the following if else if statements using switch case statements. Also [2]
- give the output.
- ```
char choice='p'; int n=5,a=10;
if(choice=='A')
 System.out.println(n++ * --a+ n);
else if(choice =='B')
 System.out.println(a++ * --a % n);
else if(choice=='C')
 System.out.println(a++ / --a + n);
else
 System.out.println(n++ % --a+ n++);
```

**Section B**

(Attempt **any four** questions from this section.)

The answers in this section should consist of the programs in BlueJ environment. Each program should be written using variable description/ mnemonic codes so that the logic of the program is clearly depicted.

[15]

• **Question 3**

Define a class **Library** with the following specifications:  
Member Variables:

- bookTitle: Title of the book
- authorName: Name of the author
- bookPrice: Price of the book
- bookCategory: Category of the book, one of the following:
  - 'F' for Fiction
  - 'N' for Non-Fiction
  - 'C' for Comics
- discount: Discount on the book based on its category.

Member Methods:

1. void acceptDetails(): This method accepts the details of the book using the Scanner class.
2. void applyDiscount(): This method computes the discount based on the book category:
  - F (Fiction): 10% discount
  - N (Non-Fiction): 5% discount
  - C (Comics): 20% discountCalculate the final price after the discount is applied.

3. void displayDetails(): This method displays the following information:

Book title  
Author name  
Original price  
Discount(%)  
Final price

Write the main method to create an object and call the above methods.

**Question 4:**

[15]

A matrix is a two-dimensional data object made of  $m$  rows and  $n$  columns, therefore having total  $m \times n$  values. If most of the elements of the matrix have **0 value**, then it is called a sparse matrix.

**Example:**

```
0 0 3 0 4
0 0 5 7 0
0 0 0 0 0
0 2 6 0 0
```

**Question 5**

[15]

Write a program that stores a list of countries and the % of people owning P.C. as below:

| Country   | % people owning P.C. |
|-----------|----------------------|
| India     | 78.2                 |
| Japan     | 36.7                 |
| USA       | 89.7                 |
| Germany   | 42.3                 |
| Singapore | 47.8                 |
| U.K.      | 37.8                 |

Use the above data to perform a selection sort technique to print the list in decreasing order of its % people owning P.C.

**Question 6**

[15]

Define a class to input a number and check and print whether it is a Munchausen number or not.  
A number is called Munchausen, if the sum of its digits raised to the power of itself is equal to the input number.

**Example:**

Input number: 3435

Output: Munchausen number  $[3^3 + 4^4 + 3^3 + 5^5]$

$$= [27+256+27+3125]$$

$$= [3435]$$

Question 7

[15]

Write a Java program to take a full name as input and print it in abbreviated format:  
Print the first letter of each name (except the last name) followed by a dot .

Print the last name in full.

**Example:**

Input: Avul Pakir Jainulabdeen Abdul Kalam

Output: A.P.J.A.Kalam

Input: Ratan Naval Tata

Output: R.N.Tata

Question 8

[15]

Define a class to overload the method display as follows:

void perform(char ch): To perform the following format using nested loop.  
Where ch is the last row character.

If ch is C (3 lines)

Output is:

```
A
A B
A B C
```

void perform( ): To print the sum of the series.  
S= 1 - 2 +3 - 4 + 5 - 6 + -----+ 19

void perform(int n): To print the square root of each digit of the given number.

Example : n=4392

Output:

1.414213562

3.0

1.732050808

2.0

\*\*\*\*\*

**General Instructions:**

- This paper is divided into two sections. Attempt **all** questions from **Section A** and **any** four from **Section B**. Use **self-explanatory class names and variable names**. Write **variable description table with each program in proper format**.
- While answering the questions, **indicate briefly your working and reasoning wherever required**.
- This paper consists of 6 printed sides.

**SECTION A (40 MARKS)**

**Question 1.**

Choose the correct option and also write the answer:

[20]

- d (i) Which programming construct is depicted in the following picture?



- (a) while                      (b) do – while                      (c) for                      ✓ (d) if-else

- ⓑ (ii) Identify the method from the following which belong to the class :

- (a) length()                      (b) charAt()                      ✓ (c) valueOf()                      (d) substring()

- a (iii) Each comparison in a \_\_\_\_\_ technique eliminates half of the values to take into consideration.

- ✓ (a) Binary Search                      (b) Selection Sort                      (c) Bubble Sort                      (d) Linear Search

- a (iv) The purpose of user defined functions is :

(1) Modularity                      (2) Reuse                      (3) increase complexity of code

- ✓ (a) 1 & 2                      (b) 2 & 3                      (c) Only 1                      (d) Only 3

- d (v) Consider the following image where all items are made of flour. State the principle implemented by the image.



- (a) Inheritance                      (b) Encapsulation                      (c) Abstraction                      ✓ (d) Polymorphism

Grade: 10 Computer Applications

(vi) char a[ ] = new char[5] will occupy how many bits?  
 (a) 40 (b) 10 (c) 80 (d) 5

(vii) Assertion(A) – Bubble sort works faster than Selection sort in large arrays.  
 Reason(R) – In Selection sort, the maximum number of exchanges is length-1.  
 (a) Both Assertion(A) and Reason(R) are true and Reason(R) is the correct explanation of Assertion(A)  
 (b) Both Assertion(A) and Reason(R) are true and Reason(R) is not the correct explanation of Assertion(A)  
 (c) Assertion(A) is true and Reason(R) is false  
 (d) Assertion(A) is false and Reason(R) is true

(viii) The output of 45%10/2 is:  
 (a) 2.5 (b) 0 (c) 0.0 (d) 2

(ix) A company cafeteria where employees of that company of all departments can enter, represent \_\_\_\_\_ access specifier.  
 (a) public (b) default (c) protected (d) private

(x)  Consider the adjacent image as a DDA named seats. Specify its order/size.  
 (a) 3 x 5 (b) 4 x 6  
 (c) 5 x 3 (d) 6 x 4

(xi) Assign value "Neeraj" to 4<sup>th</sup> Row and 3<sup>rd</sup> Column in the array seats[][] of Question x.  
 (a) seats[4][3] = "Neeraj" (b) seats[3][4] = "Neeraj"  
 (c) seats[3][2] = "Neeraj" (d) seats[4][2] = "Neeraj"

(xii) A banking application has overloaded methods for processing transactions. Which of the following pairs of methods will cause a compile-time error due to incorrect method overloading?  
 (a) void processTransaction(int accountId) and int processTransaction(int amount)  
 (b) void processTransaction(int accountId, double amount) and void processTransaction(int accountId)  
 (c) void processTransaction(String accountType, double amount) and void processTransaction(double amount, String accountType)  
 (d) void processTransaction(int accountId, double amount) and double processTransaction(double accountId, double amount)

(xiii) System.out.println(Math.ceil(78.3)+ Math.floor(-75.3));  
 (a) - 3.0 (b) 3.0 (c) 4.0 (d) - 4.0

(xiv) When the object of the Wrapper class is converted to its primitive type, the concept used is:  
 (a) Unboxing (b) Autoboxing (c) Boxing (d) Both (b) and (c)

- (xv) Consider the following program segment which calculates the sum of factorial of 1 to n. ( $S=1!+2!+3!+\dots+n!$ ) in which the statements are jumbled. Choose the correct order of the statements to return the result.

```
int sum = 0, i,f=1; → 1
return sum; → 2
for(i=1; i<=n; i++) → 3
{ sum+=f; → 4
 f*=i; } → 5
```

- (a) 1 2 3 4 5      (b) 1 3 4 5 2      (c) 1 3 5 4 2      (d) 3 4 5 1 2

- (xvi) A vending machine takes the value and goes through all the items and chooses the desired item. Again takes the value and goes through all the items, again takes the value and goes through all the items.....and so on. Which programming construct is depicted in the picture?



- (a) loop      (b) condition  
(c) nested loop      (d) nested condition

- (xvii) A function whose multiple copies can exist is invoked through :  
(a) object      (b) class      (c) parameters      (d) constructor

- (xviii) Identify which of the following leads to an infinite loop.  
(a) for(i=100; i!=0; i- -)      (b) for(i=30; i<=100; i+=3)  
(c) for(i=100; i>=100; i++)      (d) for(i=10; i>=10 ;i- -)

- (xix) State the output of "PINEAPPLE".compareToIgnoreCase("custardapple");  
(a) 13      (b) -14      (c) -19      (d) 14

- (xx) Choose the correct statement to create an object of class Mango.  
(a) Mango stick = new stick();      (b) IceCream Mango = new Mango();  
(c) Mango M = new shrikhand();      (d) Mango juice = new Mango();

**Question 2.**

- (i) How many bytes will be occupied by variable x. Also state the programming concept implemented in the statement. [2]  
`x='Y'+32;`
- (ii) Write a Java statement to calculate sum of cuberoot of x and rounded up value of y. [2]
- (iii) State the output: [2]  
`System.out.print("\n is a new line \character' to \ttake the cursor on a \new line\");`

(iv) Rewrite the following using conditional operator:

```
String a;
if(x<0)
 a="Negative";
else if(x>0)
 a="Positive";
else
 a="Zero";
```

(v) Give the output of the following program segment and mention how many times the loop is executed. [2]

```
int k = 50;
while (true)
{
 k-=7;
 if(k%5==0)
 continue;
 System.out.println(k);
 if(k%9==0)
 break;
}
```

(vi) Shriya writes the following code to print the product of the first and last element of the array. [2]

```
void product(int a[])
{
 int len = a.length;
 System.out.println("Product="+a[0]*a[len]);
}
```

However, she gets an error in the code. Specify the type of error and rewrite the correct code.

(vii) Consider the following code and state the output when value of x="white", means [2]

```
String x="white";
switch(x)
{
 case "blue":
 System.out.println("Ocean Color");
 break;
 case "green":
 System.out.println("Environment Color");
 case "white":
 System.out.println("Peace Color");
 case "black":
 System.out.println("Favourite Color");
 default:
 System.out.println("Unpopular Color");
}
```

(viii) String str="Best School"; [2]  
System.out.println(str.charAt(0)+str.charAt(4));  
System.out.println(str.substring(5).substring(0,3).toUpperCase());

```
(ix) class Sample
{
 int m ;
 String n;
 static double x;
 Sample()
 {
 m=50;
 n="Nidhi";

 void print ()
 {
 int i;
 System.out.print(n+" "+m);
 }
 public static void main()
 {
 Sample ob1=new Sample();
 ob1.print();
 }
}
```

[2]

- (a) Name the global and local variables used in the class. Also state the output.  
 (b) State the type of the constructor used.

```
(x) String a="12.34", b="2026";
int x = Integer.parseInt(b);
double y = Double.parseDouble(a);
int z=(int)y;
System.out.println(a+x);
System.out.println(x+z);
```

[2]

**SECTION B (60 Marks)**

Attempt any **four** questions from this Section. Write all programs using Scanner input method.

**Question 3.**

Design a class called BankLoan with the following specifications:

[15]

Some of the Data Members are:

- loanId : to store the loan ID
- Name : to store the name of the borrower
- P : to store the total loan amount
- R : to store the annual interest rate
- years : to store the number of years for repayment

Member Functions:

BankLoan() : default constructor to initialize the data members

input() : to accept the values of the data members

calculateEMI() : to calculate and return the monthly EMI using the formula:

$$EMI = \frac{P \times R \times (1 + R)^N}{(1 + R)^N - 1}$$

where  
 P= loan amount,  
 R= monthly interest rate (annual rate / 12 / 100),  
 N= total number of months (years × 12).

display() : to print all the details including calculated EMI

Write the main method to create an object of the class and demonstrate all the above methods.

**Question 4.** [15]

Define a class to accept values into a 3x4 integer array. Calculate and print the **Frobenius Norm** of the matrix. Frobenius Norm of the matrix is the square root of sum of squares of each element of the array.

Example:

|   |   |   |   |
|---|---|---|---|
| 3 | 1 | 2 | 4 |
| 4 | 2 | 1 | 3 |
| 5 | 1 | 2 | 2 |

Then Frobenius Norm is  $\sqrt{3^2 + 1^2 + 2^2 + 4^2 + 4^2 + 2^2 + 1^2 + 3^2 + 5^2 + 1^2 + 2^2 + 2^2}$   
 = square root of (9+1+4+16+16+4+1+9+25+1+4+4) = 94

**Question 5.** [15]

Define a class to accept a number and check whether it is a Mars Number or not. A number is a Mars number if it is divisible by the product of its first and last digits. E.g. 132 is a Mars number as first digit : 1, last digit 2, product = 1x2=2 and 132 is divisible by 2

**Question 6.** [15]

Define a class to overload the method display() as follows:

void display() – Print the following number pattern using nested loops:

```

1
1 2
1 2 1
1 2 1 2
1 2 1 2 1
```

void display(int n, int m) –

If n > m, print the difference n – m otherwise print the sum of squares n and m.

double display(double x, double y, double z) –

Compute the value of t as : sum of xy, yz and zx

**Question 7.** [15]

Define a class to accept names of 10 students and percentage in two different SDA. Sort the array on names in ascending order using bubble sort and print the name and the percentage of students.

**Question 8.** [15]

Define a class to accept a vehicle registration number in the format:

StateCode-DistrictCode-Series-Number

Example: MH-12-AB-1234

Extract and display in the following format:

- State Code : MH
- District Code : 12
- Series : AB
- Vehicle Number : 1234

The hyphen(-) should be at positions 3, 6 and 9 only.

# Scan QR code for Free Access to 500+ Prelim Papers across 20 subjects

