ST. FRANCIS' COLLEGE
PRE BOARD EXAMINATION (2025-26)
CLASS - X
SUBJECT – COMPUTER APPLICATIONS

TIME: 2 HOURS

M.M. 100

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 (40 Marks)
(Attempt all questions from this Section.)

Question1

[20]

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

(i) A linear search...........
    a) can be used with sorted arrays only
    b) can be used with unsorted arrays only
    c) can be used with both sorted and unsorted arrays
    d) cannot be used with arrays

(ii) Which **construct** can be used to get only one of the required ice creams?
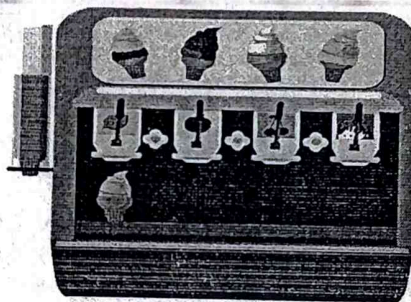
    (a) switch construct
    (b) while construct
    (c) do while construct
    (d) for construct

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(iii) Which statement is **correct** for the **method prototype** given below:
int check(char ch, String s)
- (a) check( )does not return any value
- (b) check()has return type int
- (c) check method has two actual parameters
- (d) check( ) is a constructor

(iv) The **Math method** which returns **int** value is:
- (a) round()
- (b) cbrt()
- (c) ceil()
- (d) random()

(v) What is the output of the following statement:
"MONOPOLY".lastIndexOf('O');
- (a) 1
- (b) 3
- (c) 2
- (d) 5

(vi) Which of the following is true for the given object creation statement?
__Game cricket = new Game( );__
- a) Game is an object of cricket class
- b) New keyword creates object Game
- c) Game is a class and cricket is an object
- d) Game and cricket are objects

(vii) What is the **output** of the code snippet given below?
```
int lives = 5;
        System.out.print(lives--);
        System.out.print(lives);
```
- (a) 4   3
- (b) 5   4
- (c) 5   3
- (d) 4   4

ii) What will be the output of the following statement?
   String s = "JavaProgramming";
   System.out.println(s.substring(4,11).toUpperCase());
   (a) Programm
   (b) PROGRAMM
   (c) PROGRAM
   (d) program

ix) Which of the following **access specifiers** will make a member accessible **only**
Within its own class?
   (a) public
   (b) private
   (c) protected
   (d) default

(x) What will be the **output** of the following Java method?
   Character.isLetterOrDigit('\n')
   (a) 1
   (b) 0
   (c) true
   (d) false

(xi) Which of the following is **not** a type of.**token** in Java?

1.	Method	3.	Literal
2.	Identifier	4.	Keyword

   (a) only 1
   (b) 1 and 3
   (c) only 2
   (d) only 4

(xii)   **Assertion (A):** An argument is a value that is passed to a method when it is called.
   Reason (R): Variables which are declared in a method prototype to receive values are
called actual parameters
   (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

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(xiii)   What is the **output** of the following Java code?

```
boolean flag=false;
if (flag) {
System.out.println("True");
} else { System.out.println("False");
}
```

    (a) True
    (b) False
    (c) No output
    (d) Compilation error

(xiv)   Identify the **static method** from the list given below:
    (a) length()
    (b) nextLine()
    (c) substring(int)
    (d) isLetter(char)

(xv)   Stringa[]={"Rohini","Rajarshi","Rajeev","Rehan","Rebecca"};
    System.out.println(a[2].substring(2));

    Which one of the following will be the output of the above statements?
    (a) jeev
    (b) Ra
    (c) Raj
    (d) je

(xvi)   **System.out.println(Math.round(Math.ceil(-8.8)));** will result in:
    (a) 8.0
    (b) −8.0
    (c) −9
    (d) −8
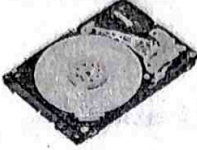
(xvii)   Which one of the following Java statements **assign 100** to the **last** element of a **3×3 array?**
    (a) x[2][2]=100;
    (b) x[3][3]=100;
    (c) x[2][3]=100;
    (d) x[3][2]=100;

(xviii) Consider the **Two dimensional array** S[2][3], of **storage devices** given above, state the **index** of the **Hard disk**.

(xix)

(a) S[1][0]
(b) S[0][1]
(c) S[1][2]
(d) S[0][

4

(a) S[1][0]

(b) S[0][1]
(c) S[1][2]
(d) S[0][0]

Floppy Disk	Pen Drive	DVD
Hard Disk	Storage Tape	Memory card

(xix) String s = "Examination";
int n = s.length();
System.out.println(s.startsWith(s.substring(5, n)));
System.out.println(s.charAt(2) == s.charAt(6));

a) False, True
b) True, False
   False, False
   True, True

(xx) Consider the following program segment in which the statements are **jumbled**. Choose the **correct order** of the statements to return the **sum of first 10 natural Numbers**.

for(i=1;i<=10;i++)	1
return sum;	2
int sum = 0,i;	3
sum+=i;	4

(a) 1 2 3 4

(b) 3 4 1 2

(c) 1 4 2 3

(d) 3 1 4 2

Question2

(i) Rewrite the following code using the if-else statement: [2]

int m = 400; double ch = (m > 300)? (m/10.0)*2: (m/20.0)–2;

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(ii)   Evaluate the given expression when x= 4

$$x^* = --x + x + ++x$$

(iii)   Convert the following **switch** case into **if else if:**   [2]

```
switch(x)

{
case'T' :
case't':System.out.print("Teacher");

break; default:System.out.print("Student");

}
```

(iv)   Write the **output** of the following program segment: [2]
```
char ch = 'F';
int m = ch;
m=m+5;
System.out.println(m + " " + ch);
```

(v)   In the example given below of class **Cat**, identify the **variable** and the **methods:**   [2]

Cat
Name
meow()
eat()
play()

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

```
int k = 100;
while(k>=10)
{
System.out.println(k);
k-=40;
}
```

(vii) Consider the given array and answer the questions given below: [2]

int z[][]= {{2, 3,4}, {5,1,2},{7, 9, 3}};

(a) What is the **order** of the array z[][]?

(b) What is the value in z[2][0]?

(viii) Give the **output** of the following: [2]

(a) "ROSE".compareTo("ROJA")

(b) "DEDICATE".replace('D','L')

(ix) Consider the following array and answer the questions given below: [2]

char ch[]={ 'A','%','y','@','7', 'p'};

(a) How many **bytes** does the array occupy?

(b) What is the output of the statement **Character.isDigit(ch[4])**?

(x)
```
class perform
{     int m;String name;
    perform( int x , String y)
{
m=x;
name=y;
}

void print()
{     System.out.print(name+"    "+m);
}

public static void main()
{     perform ob1=new perform(95,"Xavier");
      ob1.print( );
}
}
```
[2]

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(a) Give the **output** of the code given above.
(b) Name the **type** of the **constructor** used.

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.
Flow charts and algorithms are not required.

Q3. Define a class named CloudStorage with the following specifications:
• **Member Variables: -**
int acno - stores the user's account number. –
int space - stores the amount of storage space in GB purchased by the user. –
double bill - stores the total price to be paid by the user.
• **Member Methods: -** CloudStorage() –default constructor
void accept() - prompts the user to input their account number and storage space using Scanner class methods only. –
void calculate() - calculates the bill total price based on the storage space purchased using the pricing table provided:

Storage range	Price per GB (Rs)
First 15 GB	15
Next 15 GB	13
Above 30 GB	11

void display() - displays the account number, storage space and bill to be paid.
Write a main method to create an object of the class and invoke the methods of the class with respect to the object.

Q 4. A student appearing for the ICSE/ISC examination will be given an index number, which is of the following format:
Number of 7 digits/number of 3 digits. The first digit represents ICSE(1) or ISC(2), the next two digits represent the year, the next four digits represent the centre number, the last 3 digits represent the index number.
Example: 1244311/204
Class: 10
Year: 24
Centre number: 4311
Index number: 204

Example: 2259856/107

Class: 12 Year: 25
Centre number: 9856
Index number:107
Define a class to accept the student index number as a String and print his/her details as above.

Q5. Define a class to accept a number and check if the sum of the first digit and the last digit Is an even number or an odd number.

Example:	N = 2396	N=9316
First digit:	2	9
Last digit:	6	6
Sum:	8	
		15
Output:	Sum is even	Sum is odd

Q6. Write a Java program to input a 2D array of size 3*3 and print it in the form of a matrix also print the sum of boundary elements along with printing the boundary element in a boundary format.

Example—Input:
1
2
3
4
5
6
7
8
9

Output:
1 2 3
4 5 6
7 8 9
Sum of boundary element: 40
Printing boundary matrix:
1 2 3
4   6
7 8 9

Q7. Design a class overloading and a method display( ) as follows:

1. void display(String str, int p) with one String argument and one integer argument. It displays all the uppercase characters if 'p' is 1 (one) otherwise, it displays all the lowercase characters.
2. void display(String str, char chr) with one String argument and one character argument. It displays all the vowels if chr is 'v' otherwise, it displays all the alphabets. in 5th

Q8. Write a program to initialize the following character arrays and print a suitable message after checking the arrays whether the two arrays are identical or not. Make suitable use of Boolean data type. X[ ] ={'m', 'n', 'o', 'p'} and Y[ ] ={'m', 'n', 'o', 'p' }

X[ ] =('m', 'n', 'o', 'p'} and
Y[ ] =('m', 'n', 'o', 'p' }