STD : X   MARKS : 100

Date :-   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 the paper is the time allowed for writing the answers.

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

Section A (40 marks)
(Attempt all questions)

Question 1   [20]

1. Which of the following functions checks whether a character is a blank or not?

    a)Character.isBlankSpace( )   b) Character.isWhiteSpace( )

    c) Character.isEmptySpace( )   d) none

2. The while statement repeats the execution of a block only when the given condition is:

    a)false   b) true

    c) 0   d) none

3. The process of calling a method in such a way that the change in the formal arguments reflects on the actual parameter is known as:

    a)Call by reference   b) Call by value

    c) Call by method   d) None

4. For which purpose a constructor is used?

    a) To initialise the instance variables
    b) To provide the instance variables
    c) To organise the instance variables
    d) To simplify the instance variables.

5. Which element is represented by a[10]?

    a) 10th
    b) 9th
    c) 11th
    d) None

6. A dimensional array is also known as:

    a) Subscripted variable
    b) Actual variable
    c) Compound variable

d) None

7. Method that converts a character to uppercase is ....

    a) toUpper()
    b) ToUpperCase()
    c) toUppercase()
    d) toUpperCase(char)

8. Identify the type of operator &&:

    a) Ternary
    b) Unary
    c) Logical
    d) Relational

9. Char ch='F';
   Int m=ch;
   M=m+5;
        System.out.println(m + " " + ch);

    a) 74
    b) 75
    c) 76
    d) none

10. choose the odd keyword among the following:

    a) for
    b) case
    c) if
    d) New

11. Identify the type of operator = =:
    a) Assignment
    b) Logical
    c) Relational
    d) None
12. Give the output of the following code:

        String P = "20", Q ="19";

        int a = Integer.parseInt(P);

        int b = Integer.valueOf(Q);

        System.out.println(a+b);

    a) 2019
    b) error
    c) 39

d) none

13. Name the Java keyword that indicates that a method has no return type.

    a) int
    b) boolean
    c) double
    d) void

14. Name the type of error when division by a variable that contains a value of zero.

    a) Runtime error
    b) Logical error
    c) Syntax error
    d) None

15. What will the following code output:
    String s="mississippi";
    System.out.println(s.lastIndexOf('i'));

    a) 11
    b) 10
    c) error
    d) none

16. Name the package that contains Scanner class.

    a) util
    b) lang
    c) none

17. The method of Scanner class used to accept a sentence:

    a) nextInt( )
    b) nextString( )
    c) next( )
    d) nextLine( )

18. String   str= "Good morning ", str1= "Luck ";

    System.out.println(str.substring(0,4)+ " "+stri);

    a) GoodLuck
    b) Goodluck
    c) good Luck
    d) Good Luck

19. Which among the following is smallest in size
    a) int
    b) long
    c) byte
    d) short

20. Return data type of equalsIgnoreCase( ) is........... .
   a) Boolean
   b) boolean
   c) bool
   d) char

Question 2. [10]

1. Give a difference between a constructor and a method.
2. Differentiate between call by value and call by reference.
3. State one difference between the floating point literals float and double.
4. Differentiate between implicit and explicit.
5. Differentiate between equals( ) and equalsIgnoreCase( ).

Question 3. [10]

1. What is the value stored in variable res given below:

   double res = Math.pow ("345".indexOf('5'), 3);

2. What are the values of a and b after the following function is executed, if the values passed are 30 and 50:
   void paws(int a, int b)
   {
           a=a + b;
           b=a – b;
           a=a – b;
           System.out.println(a+ "," +b);
   }

3. State the output when the following program segment is executed:

   String a ="Smartphone", b="Graphic Art";
   String h=a.substring(2, 5);
   String k=b.substring(8).toUpperCase();
   System.out.println(h);
   System.out.println(k.equalsIgnoreCase(h));

4. int k = 5, j = 9;
   k += k++ - ++j + k;
   System.out.println("k = " + k);
   System.out.println("j = " + j);

5. write a java expression for the following:
   ax^5+bx^3+c

Section– B (60 marks)

(Attempt any four questions from this section. The answers in this section should consist of the program in Blue J environment with java.)

Question 4.

Define a class called Library with the following description: [15]

Instance Variables/Data Members:

int accNum — stores the accession number of the book.

String title — stores the title of the book.

String author — stores the name of the author.

Member methods:

1. void input() — To input and store the accession number, title and author.
2. void compute() — To accept the number of days late, calculate and display the fine charged at the rate of Rs. 2 per day.
3. void display() — To display the details in the following format:

Accession Number   Title   Author

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

Question 5.

Write a program to display all DISARIUM numbers upto 2000. A number will be called

DISARIUM if sum of its digits powered with their respective position is equal with the number

itself.   [15]

e.g; 135 is a DISARIUM

(Workings $1^1+3^2+5^3 = 135$, some other DISARIUM numbers are 89, 175, 518 etc)

Question 6.

Write a program to accept a string. Convert the string into upper case letters.   [15]
Count and output the number of double letter sequences that exist in the string.
Sample Input: "SHE WAS FEEDING THE LITTLE RABBIT WITH AN APPLE"
Sample Output: 4

Question 7

Design a class to overload a function check( ) as follows: [15]

1. void check (String str , String str1) — to find whether they are same or not

2. void check(int a,int b)— to find whether they are same or not .

Question 8

Store 10 values in a array A and input a value in num variable and check how many time num is [15]

appearing in array A.

Question 9

Generate the following pattern

a) 12345

2345

345

45

5

b) INDIA
    IND1
    IND
    IN
    I