Solved 2022 Semester 2 Question Paper ICSE Class 10 Computer Applications

Class 10 - ICSE Computer Applications Solved Question Papers

Section A

Question 1(i)

Return data type of isLetter(char) is ....

1. Boolean
2. boolean
3. bool
4. char

Answer

boolean

Reason — isLetter() method returns true if the specified character is a letter else, it returns false. Thus, the return data type of isLetter(char) is boolean.

Question 1(ii)

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

1. toUpper()
2. ToUpperCase()
3. toUppercase()
4. toUpperCase(char)

Answer

toUpperCase(char)

Reason — Method that converts a character to uppercase is toUpperCase(char) method.

Question 1(iii)

Give output of the following String methods:

```
"SUCESS".indexOf('S') + "SUCCESS".lastIndexOf('S')
```

1. 0
2. 5
3. 6
4. -5

Answer

6

Reason — indexOf() returns the index of the first occurrence of the specified character within the string and lastIndexOf() returns the index of the last occurrence of the specified character within the string. Since a string begins with index 0, the given methods are evaluated as follows:

"SUCESS".indexOf('S') + "SUCCESS".lastIndexOf('S')
$\Rightarrow 0 + 6$
$\Rightarrow 6$

Question 1(iv)

Corresponding wrapper class of float data type is ....

1. FLOAT
2. float
3. Float
4. Floating

Answer

Float

Reason — Corresponding wrapper class of float data type is Float.

Question 1(v)

.... class is used to convert a primitive data type to its corresponding object.

1. String
2. Wrapper
3. System
4. Math

Answer

Wrapper

Reason — Wrapper class is used to convert a primitive data type to its corresponding object.

Question 1(vi)

Give the output of the following code:

```
System.out.println("Good".concat("Day"));
```

1. GoodDay
2. Good Day
3. Goodday
4. goodDay

Answer

GoodDay

Reason — concat() method is used to join two strings. Thus, "Good" and "Day" are joined together and printed as "GoodDay".

Question 1(vii)

A single dimensional array contains N elements. What will be the last subscript?

1. N
2. N - 1
3. N - 2
4. N + 1

Answer

N - 1

Reason — The index of an array begins from 0 and continues till Size - 1. Thus, if an array has N elements, the last subscript/index will be N - 1.

Question 1(viii)

The access modifier that gives least accessibility is:

1. private
2. public
3. protected
4. package

Answer

private

Reason — A data member or member method declared as private is only accessible inside the class in which it is declared. Thus, it gives the least accessibility.

Question 1(ix)

Give the output of the following code :

```
String A = "56.0", B = "94.0";
double C = Double.parseDouble(A);
double D = Double.parseDouble(B);
System.out.println((C+D));
```

1. 100
2. 150.0
3. 100.0
4. 150

Answer

150.0

Reason — parseDouble() method returns a double value represented by the specified string. Thus, double values 56.0 and 94.0 are stored in C and D, respectively. Both C and D are added and 150.0 (56.0 + 94.0) is printed on the screen.

Question 1(x)

What will be the output of the following code?

```
System.out.println("Lucknow".substring(0,4));
```

1. Lucknow
2. Luckn
3. Luck
4. luck

Answer

Luck

Reason — The substring() method returns a substring beginning from the startindex and extending to the character at index endIndex - 1. Since a string index begins at 0, the character at startindex (0) is 'L' and the character at the endIndex (4-1 = 3) is 'k'. Thus, "Luck" is extracted and printed on the screen.

Section B

Question 2

Define a class to perform binary search on a list of integers given below, to search for an element input by the user, if it is found display the element along with its position, otherwise display the message "Search element not found".

2, 5, 7, 10, 15, 20, 29, 30, 46, 50

```java
import java.util.Scanner;

public class KboatBinarySearch
{
    public static void main(String args[]) {

        Scanner in = new Scanner(System.in);
        int arr[] = {2, 5, 7, 10, 15, 20, 29, 30, 46, 50};

        System.out.print("Enter number to search: ");
        int n = in.nextInt();

        int l = 0, h = arr.length - 1, index = -1;
        while (l <= h) {
            int m = (l + h) / 2;
            if (arr[m] < n)
                l = m + 1;
            else if (arr[m] > n)
                h = m - 1;
            else {
                index = m;
                break;
            }

        }

        if (index == -1) {
            System.out.println("Search element not found");
        }
        else {
            System.out.println(n + " found at position " + index);
        }
    }
}
```
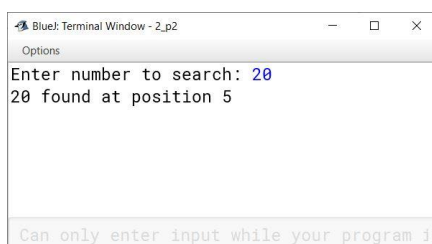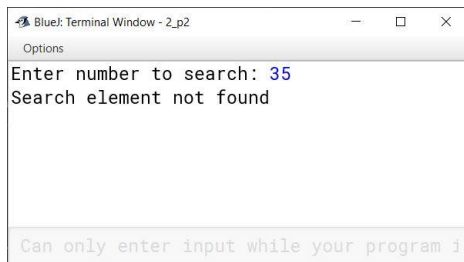
Output

Question 3

Define a class to declare a character array of size ten. Accept the characters into the array and display the characters with highest and lowest ASCII (American Standard Code for Information Interchange) value.
EXAMPLE :
INPUT:
'R', 'z', 'q', 'A', 'N', 'p', 'm', 'U', 'Q', 'F'
OUTPUT :
Character with highest ASCII value = z
Character with lowest ASCII value = A

```java
import java.util.Scanner;

public class KboatASCIIVal
{

    public static void main(String[] args)
    {
        Scanner in = new Scanner(System.in);
        char ch[] = new char[10];
        int len = ch.length;

        System.out.println("Enter 10 characters:");
        for (int i = 0; i < len; i++)
        {
            ch[i] = in.nextLine().charAt(0);
        }

        char h = ch[0];
        char l = ch[0];

        for (int i = 1; i < len; i++)
        {
            if (ch[i] > h)
            {
                h = ch[i];
            }

            if (ch[i] < l)
            {
```
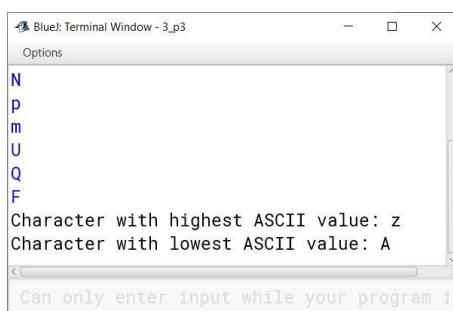
```
                    l = ch[i];
                }
            }

        System.out.println("Character with highest ASCII value: " +
h);
        System.out.println("Character with lowest ASCII value: " +
l);
    }

}
```

Output

Question 4

Define a class to declare an array of size twenty of double datatype, accept the elements into the array and perform the following :

Calculate and print the product of all the elements.
Print the square of each element of the array.

```java
import java.util.Scanner;

public class KboatSDADouble
{
    public static void main(String[] args)
    {
        Scanner in = new Scanner(System.in);
        double  arr[] = new double[20];
        int l = arr.length;
        double p = 1.0;

        System.out.println("Enter 20 numbers:");
        for (int i = 0; i < l; i++)
        {
            arr[i] = in.nextDouble();
        }

        for (int i = 0; i < l; i++)
```
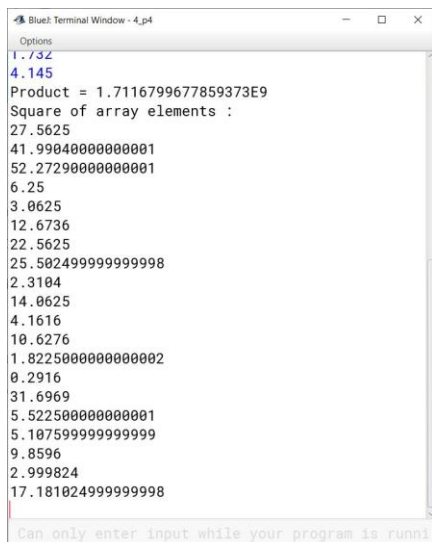
```
        {
            p *= arr[i];
        }
        System.out.println("Product = " + p);

        System.out.println("Square of array elements :");
        for (int i = 0; i < l; i++)
        {
            double sq = Math.pow(arr[i], 2);
            System.out.println(sq + " ");
        }
    }
}
```

Output

Question 5

Define a class to accept a string, and print the characters with the uppercase and lowercase reversed, but all the other characters should remain the same as before.

EXAMPLE:
INPUT : WelCoMe_2022
OUTPUT : wELcOmE_2022

```
import java.util.Scanner;

public class KboatChangeCase
{
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a string:");
        String str = in.nextLine();
```

```java
        int len = str.length();
        String rev = "";

        for (int i = 0; i < len; i++)
        {
            char ch = str.charAt(i);
            if (Character.isLetter(ch))
            {
                if(Character.isUpperCase(ch))
                {
                    rev += Character.toLowerCase(ch);
                }
                else
                {
                    rev += Character.toUpperCase(ch);
                }
            }
            else
            {
                rev += ch;
            }
        }

        System.out.println(rev);

    }
}
```


Output

Question 6

Define a class to declare an array to accept and store ten words. Display only those words which begin with the letter 'A' or 'a' and also end with the letter 'A' or 'a'.
EXAMPLE :
Input : Hari, Anita, Akash, Amrita, Alina, Devi Rishab, John, Farha, AMITHA
Output: Anita
Amrita
Alina
AMITHA

```java
import java.util.Scanner;

public class KboatWords
{
```

```java
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
        String names[] = new String[10];
        int l = names.length;
        System.out.println("Enter 10 names : ");

        for (int i = 0; i < l; i++)
        {
            names[i] = in.nextLine();
        }

        System.out.println("Names that begin and end with letter A
are:");

        for(int i = 0; i < l; i++)
        {
            String str = names[i];
            int len = str.length();
            char begin = Character.toUpperCase(str.charAt(0));
            char end = Character.toUpperCase(str.charAt(len - 1));
            if (begin == 'A' && end == 'A') {
                System.out.println(str);
            }
        }
    }
}
```
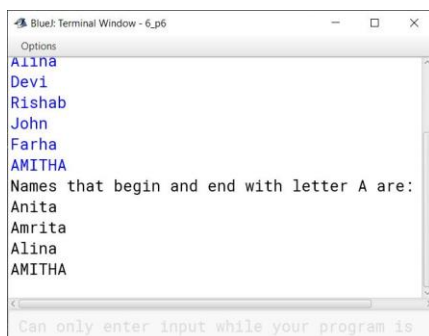
Output

Question 7

Define a class to accept two strings of same length and form a new word in such a way that, the first character of the first word is followed by the first character of the second word and so on.
Example :
Input string 1 – BALL
Input string 2 – WORD

OUTPUT : BWAOLRLD

```java
import java.util.Scanner;

public class KboatStringMerge
{
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter String 1: ");
        String s1 = in.nextLine();
        System.out.println("Enter String 2: ");
        String s2 = in.nextLine();
        String str = "";
        int len = s1.length();

        if(s2.length() == len)
        {
            for (int i = 0; i < len; i++)
            {
                char ch1 = s1.charAt(i);
                char ch2 = s2.charAt(i);
                str = str + ch1 + ch2;
            }
            System.out.println(str);
        }
        else
        {
            System.out.println("Strings should be of same length");
        }
    }
}
```

Output