**Question 1 (1 mark):**

The program allows the user to enter two real numbers from keyboard. Print out the value of ‘x’ from the expression ax+b=0 with two decimal places.

Here is an example of how the program runs”

Enter a=3.123; b=2.222

|  |
| --- |
| 3.123 |
| 2.222 |
| OUTPUT: |
| -0.71  Press any key to continue…. |

**Question 2 (1 mark):**

Your program allows the user to enter three integers using the keyboard (STDIN). Print the smallest of the three numbers.

Here is an example of how program will run:

Enter values for the three numbers: 20, 15, 45

|  |
| --- |
| 20 |
| 15  45 |
| OUTPUT: |
| 15  Press any key to continue…. |

**Question 3:**

**Question 4 (1 mark):**

Users are required to enter an integer number to define the row of the palindrome triangle pattern (row >0).

Program prints out the palidrome triangle pattern.

Below is an example of how program will run:

For example, enter 6 for “row”:

|  |
| --- |
| 6 |
| OUTPUT: |
| A  ABA  ABCBA  ABCDCBA  ABCDEDCBA  ABCDEFEDCBA |
| Press any key to continue…. |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  | A |  |  |  |  |  |
| 2 |  |  |  |  | A | B | A |  |  |  |  |
| 3 |  |  |  | A | B | C | B | A |  |  |  |
| 4 |  |  | A | B | C | D | C | B | A |  |  |
| 5 |  | A | B | C | D | E | D | C | B | A |  |
| 6 | A | B | C | D | E | F | E | D | C | B | A |

**Question 5 (1 mark):**

Your program allows users to enter an integer array of ‘n’ (n>0) elements entered from the keyboard. The program prints the number of occurrences of each element in the array.

Below is an example of how the program will run:

|  |
| --- |
| 8 |
| 10 20 10 3 5 10 7 5 |
| OUTPUT: |
| 10-3  20-1  3-1  5-2  7-1  Press any key to continue…. |

8

B[i]=0 2 **4 6 8**

Question 6 (1 mark):

Your program allows users to enter a string “s” with a maximum length of 100 characters. The system finds characters in a series whose index is even and converts them to uppercase.

Finally the system prints the ‘s’ string to the screen.

Below is an example:

s= “c console application”

|  |
| --- |
| c console application |
| OUTPUT: |
| C CoNsOlE ApPlIcAtIoN  Press any key to continue…. |

**Question 7 (1 mark):**

Your program allows users to enter an integer array of ‘n’ elements. The system finds the first pair a given sum in the collection. A newline character \n exists between any two printed indexes.

Finally the system prints the ‘s’ string to the screen.

Below is an example when ‘n’=6; array = {6,8,4,-5,7,9}; sum=15;

|  |
| --- |
| 6  6 8 4 -5 7 9  15 |
| OUTPUT:  0  5 |
| C CoNsOlE ApPlIcAtIoN  Press any key to continue…. |

**Question 8 (1 mark):**

**Question 9 (1 mark):**

Your program allows the user to enter a string ‘s’ with a maximum length of 100 characters.

The system converts the first letter of each word to uppercase.

Print out the string ‘s’ after the conversation

Below are two examples of how the program will run:

|  |  |
| --- | --- |
| mark elliot zuckerberg | mark Elliot zuckerberg |
| OUTPUT:  Mark Elliot Zuckerberg | OUTPUT:  Mark Elliot Zuckerberg |
| Press any key to continue…. | Press any key to continue…. |

**Question 10 (1 mark):**

Your program allows the user to input an integer ‘n’.

Print out ‘n is a perfect number’ or ‘n is not a perfect number’. A perfect number is equal to the sum of its divisor.

Below is an example:

|  |  |
| --- | --- |
| n=6 | n=10 |
| 6 | 10 |
| OUTPUT:  6 is a perfect number | OUTPUT:  10 is a not perfect number |
| Press any key to continue…. | Press any key to continue…. |