

**ISC COMPUTER SCIENCE PRACTICAL**  
**Specimen Paper 2016**

**Question 1.**

An Evil number is a positive whole number which has even number of 1's in its binary equivalent. Example : Binary equivalent of 9 is 1001, which contains even number of 1's. A few even numbers are 3,5,6,9.....

Design a program to accept a positive whole number and find the binary equivalent of the number and count the number of 1's in it and display whether it is an Evil number or not with an appropriate message. Output the result in the format given below:-

Example 1

INPUT	:	15
BINARY EQUIVALENT	:	1111
NO. OF 1'S	:	4
OUTPUT	:	EVIL NUMBER

Example 2

INPUT	:	26
BINARY EQUIVALENT	:	11010
NO. OF 1'S	:	3
OUTPUT	:	NOT AN EVIL NUMBER

**Question 2.**

The encryption of alphabets are to be done as follows :

A=1

B=2

C=3

.

.

.

Z=26

The potential of a word is found by adding the encrypted value of the alphabets.

Example : KITE

$$\text{Potential} = 11 + 9 + 20 + 5 = 45$$

Accept a sentence which is terminated either by a ".", ",", "?", or "!". Each word of sentence is separated by a single space. Decode the words according to their potential and arrange them in ascending order.

Output the result in the format given below:-

Example 1

```
INPUT      :   THE SKY IS THE LIMIT.
POTENTIAL  :   THE = 33
              SKY= 55
              IS= 28
              THE = 33
              LIMIT = 63
```

```
OUTPUT      :   IS THE THE SKY LIMIT
```

Example 1

```
INPUT      :   LOOK BEFORE YOU LEAP.
POTENTIAL  :   LOOK = 53
              BEFORE = 51
              YOU = 61
              LEAP = 34
```

```
OUTPUT      :   LEAP BEFORE LOOK YOU
```

### Question 3.

Given a square matrix  $M[][]$  of order 'n'. The maximum value possible for n is 10. Accept three different characters from the keyboard and fill the array according to the instruction given below:

Fill the upper and lower elements formed by the intersection of the diagonals by character 1.  
Fill the left and right elements formed by the intersection of the diagonals by character 2.  
Fill both diagonals by character 3.

Output the result in the format given below:

Example 1.

```
ENTER SIZE :   4
INPUT      :   FIRST CHARACTER   '*'
              SECOND CHARACTER  '?'
              THIRD CHARACTER   '#'
```

```
OUTPUT

# * * #
? # # ?
? # # ?
# * * #
```

Example 2.

ENTER SIZE : 5  
INPUT : FIRST CHARACTER '\$'  
SECOND CHARACTER '!'  
THIRD CHARACTER '@'

OUTPUT

@ \$ \$ \$ @  
! @ \$ @ !  
!! @ !!  
! \$ \$ \$ @

Example 3.

ENTER SIZE : 65

OUTPUT SIZE OUT OF RANGE