Exam.		Regular/Back	
Level	BE	Full Marks	80
Programme	All (Except B.Arch.)	Pass Marks	32
Year / Part	I / I	Time	3 hrs.

Subject: - Computer Programming

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. What is high level language? What are the different types of high level languages? How computer programming language C is different from FORTRAN? [1+3+4]

2. Write an algorithm and flowchart of the distance between two points (x_1, y_1) and (x_2, y_2), governed by formula $D^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$. Where, x_1, x_2, y_1, y_2 are given by user, but should not be zero. [5+5]

3. Write a syntax used in C programming language for the followings: [2×5]

   a) scanf( )   b) while   c) struct
   d) if ... else   e) static

4. What are the significant meanings of '&' and '*' established in C programming? How can you differentiate between 'called by value' and 'called by reference' with example in C programming? [4+6]

5. State with example, how switch ( ) function differs from user defined function in computer programming language C. [4]

6. Write a pseudocode to find the standard deviation of an array of values in C programming. The array elements are read from the terminal. Use user defined functions to calculate standard deviation and mean. Standard deviation of n value is given by [8]

$$SD = \sqrt{\dfrac{\sum_{i=1}^{n}(x_m - x_i)^2}{n}}$$

Where x_m is the mean of the values.

7. Write a program in C programming language according to the output displayed below: (to open a file named RECORD.txt for the n number of data where Cost, Service Charge 5%, VAT 15%, and Total Cost must be calculated by program itself). [10]

Output is:

Item Code	Description	Rate	Quantity	Cost
001CT	Computer	22,000.00	5	110,000.00
007M	Cell Phone	8,000.00	10	80,000.00
VAT 15%				
Service Charge 5%				
Total Cost				

Thank You!!! Visit Again

8. Rewrite program correctly and write output of the given program written in C programming language below: [8]

```
# include<stdio.h>
# include<conio.h>
# include<string.h>
void main( );
    {
    char ar1[11] = {'I','o','E',' ','P','U','L','C','H','O','W','K'};
    char ar2[15] = "IoE, Pulchowk";
    char ar3[11] = {{'I'},{'O'},{'E'},
    {' '},{'P'},{'U'},{'L'},{'C'},{'H'},{'O'},{'W'},{'K'};
    clrscr( );
    {printf ("\nArray 1 = %c\n", ar1);
    printf ("\nArray 2 = %c\n", ar2);
    printf ("\nArray 1 = %c\n", ar3);
    return 0
    }
```

9. Describe the formatted input and output statement in FORTRAN programming language with it's syntax. [4]

10. Write a program in FORTRAN to evaluate the following series: [8]
series = $1/1^1 + 1/2^2 + 1/3^2 + ... + 1/n^2$

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