Course Code	**:**	**MCS-201**
Course Title	**:**	**Programming in C and PYTHON**
Assignment Number	**:**	**PGDCA_NEW(I)/201/Assign/2026**
Maximum Marks	**:**	**100**
Weightage	**:**	**30%**
Last Date of Submission	**:**	**31th October 2026 (for July, 2026 Session)**

There are ten questions in this assignment which carries 80 marks. Each question carries 8 marks. Rest 20 marks are for viva-voce. Answer all the questions from both the sections i.e. Section A and Section B. You may use illustrations and diagrams to enhance the explanations. Include the screen layouts also along with your assignment responses. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation.

SECTION-A (C-Programming)

Q1: Write an algorithm, draw a flow chart and write its corresponding C program to convert a decimal number to its equivalent Binary number. **(8 Marks)**

Q2: Write an algorithm and its corresponding C program to generate students' Progress-Report for VIII standard (section of 20 students) of a CBSE school for all its 4 terms. Use Structures concept. Assumptions can be made wherever necessary. **(8 Marks)**

Q3: Write a C program to generate the following pattern: **(8 Marks)**

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

Q4: Write a C program to perform the following operation on matrices D = A + (B * C), where A, B and C are matrices of (3 X 3) size and D is the resultant matrix. **(8 Marks)**

Q5: Write a C program to take a list of N numbers, separate even and odd numbers and put them in two appropriate files (evenfile and oddfile). Use File Handling concept. **(8 Marks)**

SECTION-B (PYTHON-Programming)

Q6: Write a program in Python to check if a given year (entered by user) is a leap year or not, support your programme with suitable comments to improve readability **(8 Marks)**

Q7: Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print an error. If the score is between 0.0 and 1.0, print a grade using the following table.

(8 Marks)

Score	Grade
>= 0.9	A
>= 0.8	B

>= 0.7	C
>= 0.6	D
< 0.6	F

Q8: Write a programme in Python to create a package named Area and create 3 module in it named – square, circle and rectangle each having a function to calculate area of square, circle and rectangle respectively. Import the module in separate location and use the functions. **(8 Marks)**

Q9: Write a program in Python to perform following: **(8 Marks)**

- To find cube of numbers in a list using lambda function.
- To display frequency of each word in a file.
- To display first n lines from a file, where n is given by user.
- To display size of a file in bytes

Q10: What are Co-routines? How Co-routines support cooperative multi-tasking in python? How Co-routines differ from threads? Compare Subroutines and Co-routines. **(8 Marks)**

Q1: Write an algorithm, draw a flow chart and write its corresponding C program to convert a decimal number to its equivalent Binary number. (8 Marks)

Answer

A non-negative decimal integer can be converted to binary by repeatedly dividing it by 2 and storing each remainder. The remainders are produced from the least significant bit to the most significant bit, so they are printed in reverse order at the end.

Algorithm

1. Start.
2. Read the decimal number n.
3. If n is 0, print 0 and stop.
4. Set i = 0.
5. Repeat while n > 0: store n % 2 in binary[i], replace n by n / 2 using integer division, and increase i by 1.
6. Decrease i by 1 and print binary[i] while i >= 0.
7. Stop.