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MCS-201

**POST GRADUATE DIPLOMA IN
COMPUTER APPLICATIONS
(PGDCA-NEW)**

Term-End Examination

June, 2025

MCS-201 : PROGRAMMING IN C AND PYTHON

Time : 3 Hours

Maximum Marks : 100

Weightage : 70%

Note : *Question No. 1 is compulsory. Attempt
any **three** questions from the rest.*

1. (a) Describe syntax errors and semantic errors, with suitable example code in C for each. 5

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- (b) Write a program in C to concatenate two strings without using `strcat( )` function. Support your code with suitable comments. 5
- (c) Illustrate the concept of “call by value” with suitable code in C. Also give *one* advantage and *one* disadvantage of call by value. 5
- (d) Compare recursion with iteration. Write recursive code in C to find sum of 0 to n where ‘ n ’ is an integer. 5
- (e) Differentiate between package and module in Python. Give an example for each. 5
- (f) What are immutable objects in Python ?
How do they differ from the mutable

objects ? List the data types under each category (i.e. mutable and immutable). 5

(g) Differentiate between the concept of method overloading and method overriding in Python. Give suitable example for each. 5

(h) What are the co-routines in Python ? How do they differ from subroutines ? 5

2. (a) Draw a flowchart to find factorial of a number, entered by the user. Also, write algorithm for the same. Transform your algorithm into a suitable code in C. Support your code with suitable comments. 10

(b) Write Python code to perform the following tasks :

(i) Create a database “Emp_DB”. 5

(ii) Create a table “Employee” in database Emp_DB with columns First_Name, Last_Name, Age, Income. Support your code with suitable comments. 5

3. (a) Briefly discuss the utility of the following in C programming. Give example code for each : 10

(i) Enumerated data types

(ii) Typedef

(iii) Typecasting

(iv) Sizeof operation

(b) Write program in Python to perform the following :

(i) Display the Fibonacci sequence upto n th term provided by user. 5

(ii) To check whether a number entered by the user is prime or not.

5

4. (a) Write Python code to perform the following tasks : 10

(i) Create a file and add contents to it.

(ii) Copying a file to another file.

(iii) Deleting a file.

(iv) To display size of file in bytes.

(v) To display first n lines from a file, where n is given by user.

(b) Briefly discuss the utility of the following Built-in string functions : 10

- (i) strstr
- (ii)strupr
- (iii) strncat
- (iv) strchr
- (v) strset
- (vi) strncmp
- (vii) strncpy
- (viii)strspn
- (ix) strrev
- (x) strlwr

5. Write short notes on any *five* of the following : 5×4=20

- (i) Lambda functions

- (ii) Decorators
- (iii) Iterators
- (iv) Generators
- (v) Map function
- (vi) Unbuffered I/O
- (vii) Array of pointers

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