Exam. Code : 208601

Subject Code : 5225

M.Sc. (IT) 1st Semester

COMPUTATIONAL PROBLEM SOLVING USING PYTHON

Paper—MIT-105

Time Allowed—Three Hours] [Maximum Marks—100

Note :— Attempt any **FIVE** questions, all questions carry equal marks.

1. (a) Explain various unique features of Python Programming Language.

   (b) Which are various data types available in Python ?

2. (a) Explain various operators available in Python.

   (b) What is selection control ? Give an example.

3. (a) What are lists in Python ? What is list slicing ? How will you iterate through a list, explain with an example ?

   (b) How do lists differ from arrays in Python ? Which are various in-built functions available in Python to manipulate/process lists ?

4. (a) What do you mean by "default argument" to a function ? How are they useful ?

   (b) What is recursion in Python ? Write a program to find HCF of two numbers using recursion and without using recursion.

5. (a) What is an object ? Which are different types of object types in Python ?

   (b) What is Top-Down Design ?

6. What is difference between error and exception ? What is exception handling in Python ? What is its need ? Explain with an example.

7. (a) What is meaning of Python Module ? Name few built-in Python modules with their namespace and their use.

   (b) Write a program to read a text file and count the number of words in it.

8. Write an Iterative function called Palindrome Checker to return True if a provided string is a palindrome, and False otherwise. Also include docstring specification for the function.