

Exam. Code : 208601  
Subject Code : 3696

M.Sc. Information Technology 1st Semester  
MIT-105 COMPUTATIONAL PROBLEM SOLVING  
USING PYTHON

Time Allowed—3 Hours] [Maximum Marks—100

**Note** :— There are **four** sections, each having **two** questions, attempt any **five** questions, selecting at least **one** from each section. **All** questions carry equal marks.

**SECTION—A**

1. Explain some unique features of Python. Explain various applications of Python programming language.
2. (a) What is difference between variable, identifier, keyword, literal and operator. What is an expression ? Give examples of each.  
(b) Which are different types of operators available in Python.

**SECTION—B**

3. (a) Which are different types of loops available in Python ? Give example of each.  
(b) Write a recursive function to check whether a given number is prime or not ?
4. (a) Explain List data type. How it differs from an array and string ? Explain various list methods.

- (b) Write a program in Python to search a given number in a list of numbers.

### SECTION—C

5. (a) How a user-defined function is created in Python ? How a function can be passed variable number of arguments ? Explain with an example.
- (b) What are lambda functions. What is their need ?
6. What is meaning of modular design ? What is Top-Down design ? Name some popular modules and their functions available in Python.

### SECTION—D

7. What is an exception ? How it differs from error ? How user defined exception is created in Python ? Also explain how an exception is handled.
8. Write a program to read, count and print all words in a text file.