Exam. Code : 107203
Subject Code : 1762

Bachelor of Computer Application (BCA) 3rd Semester

INTRODUCTION TO PYTHON PROGRAMMING

Paper—III

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **five** questions in all by selecting at least **one** question from each Section. The **fifth** question may be attempted from any section.

SECTION—A

1. (a) Explain the process of computational problem solving using python. 8

   (b) Define Operators, expressions and data types. 7

2. (a) Write a python code to create a list of seven colors of VIBGYOR. Also perform iteration over the list. 7

   (b) Explain the usage of nested conditions by writing python program. 8

SECTION—B

3. (a) Write a python program to find the smallest of three numbers using if else control structure. 7.5

   (b) What are parameters and arguments ? Write a program to find second largest number from a list using functions. 7.5

4. (a) What are python packages ? How packages are used for problem solving ? Explain. 7.5

(b) Why top-down design is preferred over bottom up ? Explain. 7.5

SECTION—C

5. (a) Write a python program to write text into a text-file. Explain its output. 7.5

(b) Differentiate write() and writeline() functions. 7.5

6. (a) Write a python code to find area of a circle by using features of object oriented programming. Explain the output of the code. 7.5

(b) What is the real time use of class in live projects ? Explain. 7.5

SECTION—D

7. Write SQL query to create a database table. Insert data into the table by writing insert queries. Write the python code to access the data from table into python's shell. 15

8. Explain the following concepts by taking suitable examples :—

(a) Searching from table. 7.5

(b) Programming with multiple tables. 7.5

Exam. Code : 107203
Subject Code : 1761

Bachelor of Computer Application (BCA) 3rd Semester

DATABASE MANAGEMENT SYSTEM

Paper—II

Time Allowed—3 Hours] [Maximum Marks—75

Note :—There are **EIGHT** questions. Candidates are required to attempt any **FIVE** questions. All questions carry equal marks.

1. Elaborate the three-level architecture of database systems. Why we need mapping between levels ? Briefly discuss components of a DBMS. 15

2. Give comparison of Relational, Hierarchical and Network model. 15

3. Describe the similarities and dissimilarities between BCNF and 3rd normal form. Discuss a case where fourth normal form is applicable and how it removes the anomalies. 15

4. Define concurrency. How concurrency is controlled using lock based protocols ? Explain with an example. 15

5. (A) What do you understand by the term views ? Give their advantages. 7

(B) Discuss the use of UNION, INTERSECTION and MINUS set operators in subqueries. 8

6. What is a cursor in SQL ? Explain its type. How to create explicit cursor in SQL ? 15

7. Compare and evaluate between NoSQL, MySQL and Oracle. 15

8. Describe the term Big Data and its significance. Explain its architecture. 15

Exam. Code : 107203
Subject Code : 1760

Bachelor of Computer Application (BCA) 3rd Semester

COMPUTER ARCHITECTURE

Paper—I

Time Allowed—3 Hours] [Maximum Marks—75

Note :—There are **EIGHT** questions. Candidates are required to attempt any **FIVE** questions. All questions carry equal marks.

SECTION—A

1. (a) How Logical and Arithmetic micro operations are used ? Explain the role of flags. 8

   (b) What is the need of timing signals ? Explain. 7

2. What is the role of instruction cycle ? Explain the different phases of this cycle. 15

SECTION—B

3. Explain the following concepts :

   (a) Stack Organisation 7.5

   (b) Instruction formats. 7.5

4. Discuss the characteristics of the following control unit designs :

   (a) Hardwired 7.5

   (b) Micro programmed. 7.5

SECTION—C

5. Write notes on the following :

   (a) Virtual memory 7.5

   (b) Cache memory. 7.5

6. (a) What is the concept of memory organisation ? Explain. 7.5

   (b) Discuss the role of auxiliary memory in detail. 7.5

SECTION—D

7. (a) How I/O processor is used as an interface ? Explain in detail. 8

   (b) Discuss modes for data transfer operations. 7

8. (a) Explain the uses of pipeline processing. 7.5

   (b) How MISD and MIMD architectures are employed ? Explain. 7.5