Exam. Code : 107203
Subject Code : 1677

Bachelor of Computer Application (BCA) 3rd Semester
(Batch 2021-24)

INTRODUCTION TO PYTHON PROGRAMMING

Paper–III

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION–A

1. (a) What are the technical strengths of Python ? Write a simple Python program that takes numeric input from a user. 7

   (b) Explain different operators and illustrate how tuples are immutable. 8

2. (a) How the list is appended and also explain different operators used on the list ? 7.5

   (b) How to create a dictionary using a constructor ? Illustrate to iterate over a dictionary. 7.5

SECTION–B

3. (a) Explain While and For loops in Python. 7

   (b) Write a program to calculate the factorial of a number using recursion. 8

4. (a) Differentiate packages and modules. 8

(b) What are the different methods of importing the external Python module ? 7

SECTION–C

5. (a) How to open and write into Python Files ? Explain with the program. 8

(b) What is the significance of Exception Handling ? Write a program to handle multiple exceptions. 7

6. (a) How to overload an Operator in Python ? Define the use of Destructor Program. 8

(b) Discuss the concept of overriding the methods with the program. 7

SECTION–D

7. (a) How is table created using Python ? Illustrate how to search a table in Python. 8

(b) Explain data modelling with examples. 7

8. Explain the below commands with examples :

(a) Modify Command

(b) Connection Command

(c) Delete Command. 15

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Bachelor of Computer Application (BCA) 3rd Semester
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COMPUTER ARCHITECTURE

Paper–I

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION–A

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

   (b) What is the need of Computer Instructions and Instruction Codes ? Explain. 7

2. What is the role of instruction cycle for designing a basic computer ? Explain the different phases of this cycle. 15

SECTION–B

3. Explain the following concepts :

   (a) General Register Organisation 7.5

   (b) Relative and Direct Addressing Mode. 7.5

4. Discuss the characteristics of the following Architecture Designs :

(a) CISC 7.5

(b) RISC. 7.5

SECTION–C

5. Write notes on the following :

(a) Cache Memory 7.5

(b) Memory Hierarchy. 7.5

6. (a) What is the advantage of using virtual memory concept ? Explain. 7.5

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

SECTION–D

7. (a) How I/O processor is employed ? Explain in detail. 8

(b) Discuss DMA mode for data transfer operations. 7

8. (a) Explain the uses of Vector Processing. 7.5

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

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DATABASE MANAGEMENT SYSTEM
Paper–II

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION–A

1. (a) Define the term DBMS. In how many groups, one can classify the users of a database system ?

   (b) Explain three — tuer architecture of a database system.

2. (a) Explain the concept of Generalization and Specialization using suitable example.

   (b) Explain the use of Primary Key, Foreign Key and Component Key using suitable example.

SECTION–B

3. Illustrate the fact that BCNF is strictly stronger than 3NF.

4. What is Concurrency Control ? What are its potential problems ? Explain the concept of Two Phase Locking Protocol in CC.

SECTION–C

5. Differentiate between DDL, DML and DCL using suitable examples.

6. What do you mean by Database Triggers ? Discuss its different types. Write the syntax for creating a Database Trigger using different parameters.

SECTION–D

7. Explain the concept of Big Data. How it is used for analysis ? Discuss giving suitable example.

8. How NoSQL is related with SQL ? Discuss different features of NoSQL using examples.