

Roll No.

OLE-3033
B. Tech. 3rd Semester (CSE)
Examination – April, 2021

PYTHON PROGRAMMING

Paper : PCC-CSE-207-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Describe the following :
 - (a) Explain the rules to define a variable in python. Show with three types of variable example.
 - (b) Explain slicing operation in python. Demonstrate with example.
 - (c) What is polymorphism ? Explain briefly with example.
 - (d) List two build in function for read/write a text/number from/to file in python.

- (e) What happens-when the print function prints a string literal with embedded newline characters ?
- (f) List two of the purposes of program documentation.

UNIT – I

- 2. (a) Write a loop that counts the number of space characters in a string. Recall that the space character is represented as.
 - (b) Light travels at $3 * 10^8$ meters per second. A light-year is the distance a light beam travels in one year. Write a program that calculates and displays the value of a light-year.
- 3. (a) Write a loop that prints your name 100 times. Each output should begin on a new line. 3 Explain the role of the variable in the header of the loop.
 - (b) The factorial of an integer N is the product of all of the integers between 1 and N, inclusive. Write a while loop that computes the factorial of a given integer N.

UNIT – II

- 4. (a) Write a program that receives a series of numbers from the user and allows the user to press the enter key to indicate that he or she is finished providing inputs. After the user presses the enter key, the program should print the sum of the numbers and their average.

- (b) Write a python program to generate a string that contains your name and address on separate lines using embedded newline characters. Then write the same string literal without the newline characters.
5. (a) Assume that the variable `my string` refers to a string, and the variable `reversed string` refers to an empty string. Write a loop that adds the characters from `my string` to `reversed string` in reverse order.
- (b) Write a code segment that opens a file for input and prints the number of four-letter words in the file.

UNIT – III

6. (a) Assume that `data` refers to a list of numbers, and `result` refers to an empty list. Write a loop that adds the nonzero values in `data` to the `result` list.
- (b) What is a mutator method ? Explain why mutator methods usually return the value `none`. Explain the difference between structural equivalence and object identity.
7. (a) Define a function named `sum`. This function expects two numbers, named `low` and `high`, as arguments. The function computes and returns the sum of all of the numbers between `low` and `high`, inclusive.

- (b) A file concordance tracks the unique words in a file and their frequencies. Write a program that displays a concordance for a file. The program should output the unique words and their frequencies in alphabetical order.

UNIT – IV

8. (a) Define a method for the Bank class that returns the total assets in the bank (the sum of all account balances).
- (b) What is a class variable ? When should the programmer define a class variable rather than an instance variable ?
9. (a) Describe what the `_init_` method should do in a class that extends another class.
- (b) Develop a terminal-based program that allows a bank manager to manipulate the accounts in a bank. This menu-driven program should include all of the relevant options, such as adding a new account, removing an account, and editing an account.
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