

Roll No.

OLE-3129
B. Tech. 3rd Semester (CSE)
Examination – April, 2021

PYTHON PROGRAMMING (With New Syllabus)

Paper : PCC-CSE-207-G(A)

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 relationship between a function and its arguments.
 - (b) The variables x and y refer to numbers. Write a code segment that prompts the user for an arithmetic operator and prints the value obtained by applying that operator to x and y.
 - (c) What is polymorphism ? Explain briefly with example.

- (d) Describe the purpose of the break statement and the type of problem for which it is well suited.
- (e) What happens when the programmer forgets to update the loop control variable in a while loop ?
- (f) Assume that the variable x has the value 55. Use an assignment statement to increment the value of x by 1.

UNIT – I

- 2.
 - (a) The math module includes a pow function that raises a number to a given power. The first argument is the number, and the second argument is the exponent. Write a code segment that imports this function and calls it to print the values 82 and 54.
 - (b) Write a program that accepts the lengths of three sides of a triangle as inputs. The program output should indicate whether or not the triangle is an equilateral triangle.
- 3.
 - (a) Assume that the variable myString refers to a string. Write a code segment that uses a loop to print the characters of the string in reverse order.
 - (b) Write a code segment that prompts the user for a filename. If the file exists, the program should print its contents on the terminal. Otherwise, it should print an error message.

UNIT – II

4. (a) Anne complains that defining functions to use in her programs is a lot of extra work. She says she can finish her programs much more quickly if she just writes them using the basic operators and control statements. State three reasons why her view is shortsighted.
- (b) Define a recursive function fact that returns the factorial of a given positive integer. In what way is a recursive design different from top-down design ?
5. (a) What roles do the parameters and the return statement play in a function definition ? 2 Define a function named even. This function expects a number as an argument and returns True if the number is divisible by 2, or it returns False otherwise.
- (b) Write a program that inputs a text file. The program should print all of the unique words in the file in alphabetical order.

UNIT – III

6. (a) Describe what happens when you run the pencolor() method with a Turtle object. Turtle graphics windows do not expand in size. What do you suppose happens when a Turtle object attempts to move beyond a window boundary ?
- (b) The function draw Rectangle expects a Turtle object and the coordinates of the upper-left and lower-right corners of a rectangle as arguments. Define this function, which draws the outline of the rectangle.

7. (a) Why does the blur function need to work with a copy of the original image ?
- (b) Explain why one would use the clone method with a given object ?

UNIT – IV

8. (a) The Student class has no mutator method that allows a user to change a student's name. Define a method set Name that allows a user to change a student's name.
 - (b) Two playing cards can be compared by rank. For example, an ace is less than a 2. When c1 and c2 are cards, $c1.rank < c2.rank$ expresses this relationship. Explain how a method could be added to the Card class to simplify this expression to $c1 < c2$.
9. (a) What are the benefits of having class B extend or inherit from class A ?
 - (b) The ATM program allows a user an indefinite number of attempts to log in. Fix the program so that it displays a message that the police will be called after a user has had three successive failures. The program should also shut down the bank when this happens.
