

- (b) Differentiate between the following : 6
- (i) terminal-based user interfaces and GUIs
 - (ii) instance variables and temporary variables

UNIT – IV

8. (a) What are instance variables, and what role does the name self play in the context of a class definition? 4
- (b) Describe how the arithmetic operators can be overloaded to work with a new class of numbers? 4
- (c) How is the lifetime of an object determined? What happens to an object when it dies? 4
- (d) Explain what a constructor does. 3
9. (a) What is the difference between a sleeping thread and a waiting thread? 4
- (b) What does a thread's run method do? 4
- (c) What is the readers and writers problem? Give real-world examples of readers and writers problem. 4
- (d) What is time slicing? 3

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(4)

Roll No.

3129

B. Tech. 3rd Semester (CSE) Examination – December, 2022

PYTHON PROGRAMMING (w.e.f. March-2021)

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. (a) What are the key features of the python? 2.5 × 6 = 15
- (b) Explain join() and split() string methods.
- (c) What are mutable and immutable types in python. Give an example of each?
- (d) Explain why it's a good idea to make a new class a subclass of an existing class.

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- (e) Why does the blur function need to work with a copy of the original image ?
- (f) What is operator overloading ?

UNIT – I

- 2. (a) 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 a right triangle. 7
- (b) Write a program that takes the radius of a sphere (a floating-point number) as input and then outputs the sphere's diameter, circumference, surface area, and volume. 8
- 3. (a) Assume that the variable data refers to the string "Python rocks!". 8
Use a string method to perform the following tasks :
 - (i) Obtain a list of the words in the string.
 - (ii) Convert the string to uppercase.
 - (iii) Locate the position of the string "rocks".
 - (iv) Replace the exclamation point with a question mark.
- (b) Write a Python program to count the frequency of words in a file. 7

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(2)

UNIT – II

- 4. (a) Assume that the variable data refers to the dictionary {'b': 18, 'a': 27}. Write the expressions that perform the following tasks : 8
 - (i) Replace the value at the key 'b' in data with that value's negation.
 - (ii) Add the key/value pair 'c': 35 to the data.
 - (iii) Remove the value at key 'b' in the data, safely.
 - (iv) Print the keys in the data in alphabetical order
- (b) Write the difference between lists and dictionaries in python. 7
- 5. (a) Write a python program to perform a binary search using recursion. 8
- (b) Describe the costs and benefits of aliasing, and explain how it can be avoided. 7

UNIT – III

- 6. (a) Describe image Methods in detail with the help of examples. 8
- (b) Write a python program to draw a regular polygon using a turtle. 7
- 7. (a) Explain the python libraries used to create a graphical user interface. 9

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(3)

P. T. O.