



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Sc.(ANCS)-Hons-2023

Course Name – Principles of Programming Language

Course Code - BNC20002

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify the primary purpose of computational problems identification.
- | | |
|---|---|
| a) To define programming languages | b) To understand the behavior of algorithms |
| c) To recognize problems that can be solved using computation | d) To design graphical user interfaces |
- (ii) Which of the following is not a building block of algorithms?
- | | |
|---------------|--------------|
| a) Statements | b) State |
| c) Functions | d) Variables |
- (iii) Which algorithmic problem estimates the finding the smallest value in a given list?
- | | |
|---------------------------|--|
| a) Towers of Hanoi | b) Insert a card in a list of sorted cards |
| c) Find minimum in a list | d) Guess an integer number in a range |
- (iv) The building blocks of algorithms interprets:
- | | |
|--|--|
| a) Arithmetic operations, control flow, functions. | b) User interface elements, databases, networks. |
| c) Text files, images, audio recordings. | d) Hardware components, operating systems, applications. |
- (v) What happens when a function is called within another function?
- | | |
|--|---|
| a) The calling function stops executing. | b) The function's code is replaced with its return value. |
| c) The called function executes independently. | d) All functions are stopped, and an error occurs. |
- (vi) Iteration and recursion can be classified as
- | | |
|--|---|
| a) Data structures used to store information. | b) Control flow structures used to repeat code. |
| c) Functions used for mathematical calculations. | d) Tools for testing and debugging algorithms. |
- (vii) What should be done first when you write a correct program?

- a) Write Algorithm
c) Logic planning
- b) Write Pseudo Code
d) Draw flow chart
- (viii) Which procedure is applied to solve a problem in a sequence?
a) Sequence
b) Flow chart
c) Algorithm
d) Procedure
- (ix) In Python, what data type would you apply to store a sequence of elements?
a) int
b) float
c) list
d) boolean
- (x) What does the expression `a, b = b, a` do in Python?
a) Assigns the value of a to b and vice versa
b) Swaps the values of a and b
c) Multiplies the values of a and b
d) Divides the values of a and b
- (xi) Which of the following statements is true about tuple assignment in Python?
a) Tuples are mutable
b) Tuples can only contain integers
c) Tuple assignment allows swapping values between variables
d) Tuple assignment is not supported in Python
- (xii) Predict the output of the following code snippet: `my_list = [1, 2, 3] my_list.append(4) print(my_list)`
a) [1, 2, 3]
b) [1, 2, 3, 4]
c) [1, 2, 3, [4]]
d) Error
- (xiii) What keyword is applied to specify the exception type to be handled in a try-except block?
a) if
b) except
c) handle
d) catch
- (xiv) Choose the benefit/benefits of using modules and packages in Python code.
a) To avoid naming conflicts between functions.
b) To organize and reuse code.
c) Both a) and b) are true.
d) There is no benefit.
- (xv) Identify the expected behavior of the following program if the user enters 0.
a) The program will raise the ZeroDivisionError exception.
b) The program will raise the TypeError exception.
c) The program will raise the ValueError exception.
d) The program will output 0 to the console.

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Develop a Flow Chart to find whether a number is odd or even. (3)
3. State all the naming rules to name a variable. (3)
4. What is aliasing and how can aliasing lead to unintended consequences in programming? Illustrate with an example. (3)
5. Compare and contrast the usage of if, if-else, and if-elif-else statements with illustrative examples. (3)
6. Describe a situation where returning a tuple is recommended over other data structures. (3)

OR

Summarize the key operations and methods available for dictionaries in Python. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write down the steps of Debugging. (5)

8. Discuss the concept of operator precedence in Python and provide an example where it influences the outcome of an expression. (5)
9. Explain with example the importance of identifying computational problems in the context of algorithmic problem-solving. (5)
10. Describe the building blocks of algorithms and their significance in algorithmic problem solving. (5)
11. Write a program that takes a filename as a command-line argument and prints its contents: (5)
12. Differentiate between syntax errors and exceptions in Python, with examples. (5)

OR

Explain how can you raise custom exceptions in Python. Provide an example. (5)
