BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Tech.(BT)-2024
Course Name – Computer Fundamentals and Python
Course Code - BES00004
(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) Compare RAM and a hard drive in terms of speed.
   a) RAM is faster
   b) Hard drive is faster
   c) Both are equally fast
   d) Hard drive is more reliable than RAM

(ii) Differentiate between system software and application software.
   a) System software is necessary for computer operation, while application software is optional
   b) Application software is required for booting the system
   c) System software runs on another software
   d) Both are the same

(iii) Justify the reason for computers use binary instead of decimal for processing.
   a) Binary is easier for humans to read
   b) Computers operate using electrical signals that represent two state
   c) Decimal is too slow for processing
   d) Binary requires more memory

(iv) Use the function that converts a string to an integer.
   a) int()
   b) str()
   c) float()
   d) bool()

(v) Determine the result of dividing by zero in Python.
   a) Returns 0
   b) Raises ZeroDivisionError
   c) Ignores the operation
   d) Returns NaN

(vi) Define the general syntax for creating a function in Python.
   a) define function()
   b) func()
   c) def function():
   d) function def()

(vii) Identify which statement is used to exit a loop prematurely.

a) continue
b) break
c) pass
d) return

(viii) Name the loop used when the number of iterations is unknown.

a) for
b) while
c) do-while
d) nested

(ix) Repeat the correct syntax for a while loop.

a) while condition:
b) while: condition
c) while condition {}
d) while(condition)

(x) Contrast tuples with lists based on their performance.

a) Tuples are slower than lists
b) Lists are faster than tuples
c) Tuples are faster than lists
d) Both have the same performance

(xi) Estimate the output of len((4, 5, (6, 7))).

a) 2
b) 3
c) 4
d) 5

(xii) Observe the effect of modifying a list inside a tuple.

a) Entire tuple becomes mutable
b) Causes an error
c) List inside tuple can be modified
d) Creates a new tuple

(xiii) Judge the correct statement about Python functions.

a) They must return a value
b) They cannot return multiple values
c) They can be nested
d) They cannot modify global variables

(xiv) Extend the concept of modules in Python.

a) They store class definitions
b) They contain reusable code
c) They only include function definitions
d) They are compiled files

(xv) Summarize the importance of OOP in Python.

a) Encapsulates data
b) Only supports procedural programming
c) Removes the need for functions
d) Eliminates global variables

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain the role of memory in a computer system (3)
3. Infer the reason Python is called an interpreted language. (3)
4. Develop a python program to check whether a number is even or odd. (3)
5. Express how dictionaries extend the capabilities of key-value storage in large-scale applications. (3)
6. Classify different types of exceptions in Python and conclude how exception handling improves program reliability. (3)

OR

Plan an efficient file handling strategy and appraise the importance of handling files properly in Python. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Associate the input, processing, storage, and output functions with real-world computing tasks. (5)

8. Classify different methods of setting up the Python path and their importance in program execution. (5)
9. Examine the difference between logical and bitwise operators in Python and identify their use cases. (5)
10. Explain how list comprehensions improve efficiency in Python programming. (5)
11. Combine control statements with data structures to improve code efficiency in Python. (5)
12. Analyze the importance of exception handling in ensuring robust and error-free program execution. (5)

OR

Classify different types of function arguments in Python and explain their usage. (5)

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