

**BACHELOR OF COMPUTER APPLICATION
FIFTH SEMESTER
PYTHON PROGRAMMING
BCA-503.3**

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

(Objective)

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. What is the purpose of an if/else statement?
 - a. An if/else statement tells the computer which chunk of code to run the instructions you coded are incorrect
 - b. An if/else statement runs one chunk of code if all the imports were successful and another chunk of code if the imports were not successful
 - c. An if/else statement executes one chunk of code if a condition is true, but a different chunk of code if the condition is false
 - d. An if/else statement executes one chunk of code to run if there is enough memory to handle it and which chunk of code to run if there is not enough memory to handle it
2. What is the output of the following code?

```
my_list = [1, 2, 3, 4, 5]
print(my_list[1:3])
```

 - a. [1,2]
 - b. [2,3,4]
 - c. [2,3]
 - d. [1,2,3]
3. In Python, which of the following is used to represent a block of code?
 - a. Parentheses
 - b. Braces
 - c. Quotation marks
 - d. Indentation
4. When does a for loop stop iterating?
 - a. When it encounters an infinite loop
 - b. When it encounters an if/else statement that contains a break keyword
 - c. When it has assessed each item in the iterable it is working on or a break keyword is encountered
 - d. When the runtime for the loop exceeds $O(n^2)$
5. Which keyword is used to inherit a class in Python?
 - a. Class
 - b. Derive
 - c. Inherit
 - d. None of these
6. What is the output of the following program?

```
x=['ab','cd']
for i in x:
    i.upper()
print(x)
```

 - a. Error
 - b. ['cd','ab']
 - c. ['ab','cd']
 - d. None of these
7. What is the purpose of the pass statement in python?
 - a. It is used to skip yield statement of a generator and return a value of None
 - b. It is used to pass control from one statement block to another
 - c. It is a null operation used mainly as a placeholder in functions, classes, etc.
 - d. It is used to skip the rest of a while or for loop and return to the start of the loop

8. What is the output of the following python programs?
`dictionary1={'Atic':1,
'World': 2,
'Superb': 3}
print(dictionary1['World']);`
- a. Compiler error due to duplicate keys b. Runtime error due to duplicate keys
c. 2 d. 3
9. Which of the following statements is true regarding Python's import statement?
a. It can only be used to import built-in modules b. It is used to execute a module
c. It can be used to import functions and variables from a module d. It is not necessary to use import to use a module
10. What is the term to describe this code?
`count,fruit,price=(2,'apple',3.5)`
- a. Tuple assignment b. Tuple matching
c. Tuple unpacking d. Tuple duplication
11. If you don't explicitly return a value from a function, what happens?
a. The function will return a Runtime Error if you don't return a value b. If the return keyword is absent, the function will return True
c. If the return keyword is absent, the function will return None d. The function will return an infinite loop because it won't know when to stop executing its code
12. What is the output of the following code?
`my_string ="World"
n="i"
while n in my_string:
print(n,end=" ")`
- a. iiii b. World
c. None d. Compiler Error
13. What is the result of the expression 5 // 2 in Python?
a. 2.5 b. 0
c. 2 d. 25
14. Review the code below. What is the correct syntax for changing the price to 15?
`fruit_info={
'fruit': 'apple',
'count':2,
'price':3.5
}`
- a. `my_list[3,5]=1.5` b. `1.5=fruit_info['price']`
c. `fruits_info['price']=1.5` d. `my_list['price']=1.5`
15. In Python, what is the purpose of inheritance in object-oriented programming?
a. To create instances of a class b. To enable code reusability and to model relationships between classes
c. To define a class method d. To encapsulate data within a class

16. Which function header is correct?
- a. `def f(a=1,b):`
 - b. `def f(a=1,b,c=2):`
 - c. `def f(a=1,b=1,c=2):`
 - d. `def f(a=1,b=1,c=2,d)`
17. Which one of the following is the correct way of calling a function?
- a. `function function_name()`
 - b. `deffunction_name()`
 - c. `function_name()`
 - d. `call function_name()`
18. The Boolean logical operators are:
- a. and, or, but
 - b. true, false
 - c. and, not, or
 - d. and, neither, nor
19. The basic mechanism that python uses to control program flow is the..... statement.
- a. pass
 - b. break
 - c. if
 - d. for
20. Which of the following is a feature of DocString?
- a. Provide a convenient way of associating documentation with python modules, functions, classes, and methods
 - b. All functions should have a docstring
 - c. Docstrings can be accessed by the `__doc__` attributes on objects
 - d. All the above

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What are the different flow control statements supports in python? Explain any 3 with a suitable example and flow chart. 10
2. Discuss the differences between a list and a tuple in Python. When would you prefer to use one over the other in your code? How will you update list items? Explain with an example. 3+2+5=10
3. Answer the following questions: 3+(2+5)=10
 - a) Describe the purpose and usage of the `__init__` method in Python classes. Provide an example to illustrate its significance.
 - b) Discuss the purpose of the `start`, `stop`, and `step` parameters in Python slice notation. Explain the concept of string slicing in Python. Provide examples to illustrate how positive and negative indices can be used to extract substrings.
4. What is an exception? What are the two parts in an error message? How do you handle exception inside a program when you try to open a non-existent file explain? 2+2+6=10
5. Explain the need for `continue` and `break` statements. Describe the purpose and usage of the `range()` function in Python. Provide examples to illustrate how it can be used in conjunction with loops. 4+3+3=10
6. a) Explain the concept of inheritance in Python. Explain different types of inheritance in Python. Describe how inheritance allows one class to inherit properties and methods from another class. Provide a clear example demonstrating single inheritance and explain how it promotes code reusability. 2+3=5
b) Define python module. Explain the types of python module with example. 2+3=5
7. Discuss the difference between positional and keyword arguments in Python functions. Provide examples to demonstrate their usage and explain when each is appropriate. Discuss the role of the `*args` and `**kwargs` parameters in Python functions. 3+2+5=10
8. a) Write a Python program that takes a list of tuples, where each tuple contains a name and an age, and returns a list of names of people who are older than 40 years. 5+5=10
b) Generate a list of numbers (you can manually create the list or use the `random` module to generate random numbers). Use the `statistics` module to calculate the following statistics for the generated list:

- Mean
 - Median
 - Standard Deviation
 - Minimum and Maximum values
- Display the calculated statistics to the user.

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