Tsi12CS

Tenkasi District

Common Quarterly Examination - 2023

Standard 12

COMPUTER SCIENCE

Time: 3.00 Hours | Part - I | Marks: 70 | 15x1=15

i) Answer all the questions:

ii) Choose the most appropriate answer from the given four alternatives and wirte the option code and the corresponding answer.

1) Which of the following is a distinct syntactic block?
   a) Subroutines b) Functions c) Definition d) Modules

2) Which of the following allow to name the various parts of a multi - item object?
   a) Tuples b) Lists c) Classes d) quadrats

3) The members that are accessible from within the class and are also available to its sub-classes is called.
   a) Public members b) Secured members
   c) Private members d) Protected members

4) Which of the following is used to describe the worst case of an algorithm?
   a) Big O b) Big A c) Big θ d) Big Ω

5) Which of the following shortcut is used to create new Python program?
   a) Ctrl + C b) Ctrl + F c) Ctrl + B d) Ctrl + M N

6) Which statement is generally used as a placeholder?
   a) Continue b) break c) pass d) goto

7) What is output of the following python code?

```
i = 15
While (i<=20):
  print(i, end='\t')
  i + = 2
```

   a) 15 16 17 18 19 20 b) 15 17 19
   c) 16 18 20 d) 15 17 19 20

8) Which of the following keyword is used to exit a function block?
   a) Def b) close c) exit d) return

9) What is the output of following python function?

```
import math
print (math.ceil(3.5 + 4.6))
```

   a) 9 b) 8.1 c) 8 d) 8.0

10) Which of the following is used as placeholders or replacement fields which get replaced along with format () function?
   a) {} b) <> c) + + d) ()

11) What is the output of the following python code?

```
a = "Govt Schools"
print(len(a))
```

   a) Govt Schools b) 11 c) 12 d) Syntax error

12) The keys in python, dictionary is specified by
   a) + b) = c) : d) ;

13) Let List 1 = [2, 4, 6, 8, 10],then print(List1[-4]) will result in
   a) 4 b) 8 c) 10 d) 6

14) Which of the following method is automatically executed when an object is created?
   a) _obj_ b) _init_ c) _del_ d) _def_

15) The process of creating an object is called as:
   a) Constructor b) Destructor c) Initialize d) Instantiation

Part - II 6x2=12

Answer any six questions. Question no. 24 is compulsory:

16) Differentiate Constructors and Selectors.
17) What is modular programming?
18) What is searching? Write its types.
19) What are the different modes that can be used to test Python Program?
20) Write a note on Continue Statement?
21) Define Global Scope.
22) What is slicing?
23) How will you create constructor in Python?
24) Let setA={3, 6, 9}, setB={1, 3, 9} then write the output of given snippet
Print(setA | set B)

Part - III 6x3=18

Answer any six questions. Question no. 33 is compulsory:

25) Why strlen is called pure function?
26) Why access control is required?
27) Write about Algorithmic complexity and its types.
28) What are string literals? Explain.
29) Write the syntax of if ..elif...else statement.
30) What are the points to be noted while defining a function?
31) What is the use of format() function? Give an example.
32) Compare List and Tuples.
33) What is the output of the following program?

```
class sample:
    def_init_(self,name):
        self.name=name
    def display(self)
        print("Welcome", self.name)
a=sample('Tamilnadu').
a.display()
```

Part - IV 5x5=25

Answer all the questions:

34) a) Explain with example Pure and impure function

(OR)

b) What is List? Why list can be called as Pairs. Explain with example.

35) a) Write the characteristics of Modules.

(OR)

b) Explain the Bubble sort algorithm with example.

36) a) Explain input() and print() functions with examples.

(OR)

b) Write a python program to display all 3 digit odd numbers.

37) a) Explain the different types of function with an example

(OR)

b) Explain about string operators in python with suitable example

38) a) Explain the different set operations supported by python with example.

(OR)

b) Explain constructor and destructors with suitable example.

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Tenkasi District
Common Quarterly Examination - 2023
12th Computer Science Answer key

1. c) Definition.
2. c) classes
3. d) Protected members
4. a) Big O
5. d) cell+N
6. c) Pass
7. b) 15 17 19
8. d) return
9. a) 9
10. a) { }
11. c) 12
12. c) :
13. a) 4.
14. b) __init__
15. d) Instantiation.

PART-II

16.

	Constructors	Selectors
1.	Constructors are functions that build the abstract Datatype.	Selectors are functions that retrieve information from the data type.
2.	It create an object bundling together different pieces of information	It extract individual pieces of information from the object.
3.	Example: city = make city (name, lat, lon)	Example: get name (city).

(OR) Any suitable Example. — Any two points — 2 marks

17. The process of subdividing a computer program into separate sub programs is called Modular Programming.

— 2 Marks

18) To search an item in data structures is called Searching (OR)
Searching is used to locate specific data in a list.
— 1 Marks
Types: 1. Linear search (or) sequential search
2. Binary " (or) Half interval ")
— 1 Mark

19. (1) Interactive mode (2) Script mode
— 2 marks

20. Continue statement is used to skip the remaining part of a loop and start with next iteration
— 1 Mark
Syntax: Continue
— 1 mark.

21. * A variable, with global scope can be used anywhere in the program. It can be created by defining a variable outside the scope of any function.
— 2 marks

22. * Slice is a substring of main string
* A substring can be taken from the original string by using [] operator and index or subscript value
* Using slice operator, you have to slice one or more substrings from a main string.
— 2 marks

23. * Constructor is the special function that is automatically executed when an object of a class is created.
* In python, there is a special method called "init" which act as constructor.
* It must begin and end with double underscore.
— 2 marks

24. {1, 3, 6, 9} — 2 Marks.

25.

Part - III

* Strlen is a pure function because the function takes one variable as a parameter, and accesses it to find its length. — ½ mark

* This function reads external memory but does not change it, and the value returned derives from the external memory accessed. — 1½ marks

26.

* Access control is a security technique that regulates who or what can view or use resources in a computing environment — 1 mark

* It is a fundamental concept in security that minimizes risk to the object. — 1 mark

27.

*The complexity of an algorithm f(n) gives the running time and/or the storage space required by the algorithm in terms of n as the size of input data. — 1 marks

Time complexity - The number of steps taken by the algorithm to complete the process. — 1 marks required.

Space complexity - The amount of memory to run to its completion. — 1 mark

28.

* It sequence of characters surrounded by quotes.

* Python supports single/double and triple quotes for a string.

* A character literal is a single character surrounded by single or double quotes. — 2 marks

— Any suitable example — 1 mark

24. {1, 3, 6, 9} — 2 Marks.

25.

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— Any suitable example — 1 mark

29. if <condition-1>:

Statements_block 1

elif <condition-2>:

Statements_block 2

else:

Statements_block n — 3 marks

30. 1. Function blocks begin with the keyword "def" followed by function name and parenthesis.

2. Any input parameters or arguments should be placed within these parentheses when you define a function.

3. The code block always comes after a colon (:) and is indented.

4. The statement "return [expression]" exits a function.

— 3 marks

31. * It is very versatile and powerful function used for formatting strings.

* The curly braces {} are used as place holders or replacement fields which get replaced along with format() function. — 2 marks

— Any suitable Example. — 1 mark

32.

	List	Tuples
1.	The elements of a list are changeable.	The elements of a tuple are unchangeable.
2.	list are enclosed within square brackets.	tuples are enclosed by parenthesis.
3.	Iterating list is slower than list.	Iterating tuples is faster than list.

— (or) any 3 differences — 3 mark

33. Welcome Tamil nadu — 3 marks

Hint

Part-IV

34) a) Pure functions:

* Pure functions are functions which will give exact result when the same arguments are passed.

Example:

let square x
return : x * x

Define Explanation — 2 1/2 marks

Impure functions.

Impure functions with the same set of arguments, you might get the different return values.

Example:

— Explanation — 2 1/2 marks

b) * List is constructed by placing expressions within square brackets separated by commas.

* List can store multiple values

* Each value can be any type and can even be another list. — 2 marks

Example: lst [(0,10),(1,20)] — 1 marks

(OR) Suitable Example

Bundling two values together into one can be considered as a pairs. 2 marks

35) a) Characteristics of modules — Any 5 points. — 5 marks

b) Bubble sort:

Definition — 1 mark

~~Pseudocode~~ — 2 marks

Example — 2 "

36) a) input() and print functions

Input() Function:

In Python, input() function is used to accept data as input at runtime.

Syntax:

Variable = input ("prompt String") — 1½ marks

Any Suitable Example — 1 marks

Print() function:

In Python, the Print() function is used to display result on the screen

Syntax:

Print ("String 1", Variable, "String 2", Variable, "String n") — 1½ marks

Any Suitable Example — 1 marks

b)

```
for i in range (10, 100, 2):
    Print (i, end = '\t').
```

(OR) Any Suitable Program — 5 marks

~~32=37~~

37) a) Give Explanation with example:

1. user defined functions
2. Built in ,,
3. Lambda functions
4. Recursion ,, — 5 marks

b) Give Explanation with example:

(i) Concatenation (+)
(ii) Repeating (*)
(iii) Append (+=)
(iv) String Slicing
(v) Stride when Slicing string.

— 5 marks

38) a) Set operations Give Explanation with example

i) Union (|)
ii) Intersection (&)
iii) difference (-)
iv) symmetric difference (^)

— 5 marks

b) Constructor Definition — 1½ 2 marks

General form

```
def __init__(self, [arg s ...]):
    <Statements>
```

Any Suitable Example

Destructor Definition — 1½ 2 marks

Any Suitable Example

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PG COMPUTER SCIENCE

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