

## மருதம் அகாடமி Youtube channel, கணியூர்

தொகுப்பு: ந. சண்முகசுந்தரம் (மருதம் ஆசிரியர்), அ.எண்: 96598 38789

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### 12<sup>th</sup> - COMPUTER SCIENCE

#### UNIT 1 - IMPORTANT

#### CHAPTER 1 – FUNCTION

##### Choose the best answer

- The small sections of code that are used to perform a particular task is called  
(A) Subroutines (B) Files (C) Pseudo code (D) Modules
- Which of the following is a unit of code that is often defined within a greater code structure?  
(A) Subroutines (B) Function (C) Files (D) Modules
- Which of the following is a distinct syntactic block?  
(A) Subroutines (B) Function (C) Definition (D) Modules
- The variables in a function definition are called as  
(A) Subroutines (B) Function (C) Definition (D) Parameters
- The values which are passed to a function definition are called  
(A) Arguments (B) Subroutines (C) Function (D) Definition
- Which of the following are mandatory to write the type annotations in the function definition?  
(A) Curly braces (B) Parentheses  
(C) Square brackets (D) indentations
- Which of the following defines what an object can do?  
(A) Operating System (B) Compiler  
(C) Interface (D) Interpreter
- Which of the following carries out the instructions defined in the interface?  
(A) Operating System (B) Compiler  
(C) Implementation (D) Interpreter
- The functions which will give exact result when same arguments are passed are called  
(A) Impure functions (B) Partial Functions  
(C) Dynamic Functions (D) Pure functions
- The functions which cause side effects to the arguments passed are called  
(A) Impure function (B) Partial Functions  
(C) Dynamic Functions (D) Pure functions

##### Answer the following questions (2 Marks)

- Define Function with respect to Programming language.

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- Differentiate interface and implementation.
- Which of the following is a normal function definition and which recursive function definition is  
i) let rec sum x y:  
return x + y  
ii) let disp :  
print 'welcome'  
iii) let rec sum num:  
if (num!=0) then return num + sum (num-1)  
else  
return num

##### Answer the following questions (3 Marks)

- Mention the characteristics of Interface.
- Differentiate pure and impure function.
- What happens if you modify a variable outside the function? Give an example.

##### Answer the following questions (5 Marks)

- Explain with example Pure and impure functions.
- Explain with an example interface and implementation.

#### CHAPTER 2 - DATA ABSTRACTION

##### Choose the best answer

- Which of the following functions that build the abstract data type?  
(A) Constructors (B) Destructors (C) recursive (D) Nested
- Which of the following functions that retrieve information from the data type?  
(A) Constructors (B) Selectors (C) recursive (D) Nested
- The data structure which is a mutable ordered sequence of elements is called  
(A) Built in (B) List (C) Tuple (D) Derived data
- A sequence of immutable objects is called  
(A) Built in (B) List (C) Tuple (D) Derived data
- The data type whose representation is known are called  
(A) Built in datatype (B) Derived datatype  
(C) Concrete datatype (D) Abstract datatype
- The data type whose representation is unknown are called  
(A) Built in datatype (B) Derived datatype  
(C) Concrete datatype (D) Abstract datatype
- Which of the following is a compound structure?

10<sup>th</sup> to 12<sup>th</sup> important Questions

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- (A) Pair (B) Triplet (C) single (D) quadrat (C)Event Driven Programming
8. Bundling two values together into one can be considered as (D) Object oriented Programming
- (A) Pair (B) Triplet (C) single (D) quadrat
9. Which of the following allow to name the various parts of a multi-item object? 7. Which of the following security technique that regulates who can use resources in a computing environment?
- (A) Tuples (B) Lists (C) Classes (D) quadrats (A) Password (B)Authentication
10. Which of the following is constructed by placing expressions within square brackets? (C) Access control (D) Certification
- (A) Tuples (B) Lists (C) Classes (D) quadrats
8. Which of the following members of a class can be handled only from within the class?
- (A) Public members (B)Protected members
- (C) Secured members (D) Private members
9. Which members are accessible from outside the class?
- (A) Public members (B)Protected members
- (C) Secured members (D) Private members
10. The members that are accessible from within the class and are also available to its sub-classes is called
- (A) Public members (B)Protected members
- (C) Secured members (D) Private members

### Answer the following questions (2 Marks)

2. Differentiate constructors and selectors.
5. What is a Tuple? Give an example.

### Answer the following questions (3 Marks)

1. Differentiate Concrete data type and abstract datatype.
2. Which strategy is used for program designing? Define that Strategy.

### Answer the following questions (5 Marks)

2. What is a List? Why List can be called as Pairs. Explain with suitable example

## CHAPTER 3 – SCOPING

### Choose the best answer

1. Which of the following refers to the visibility of variables in one part of a program to another part of the same program.
- (A) Scope (B) Memory (C) Address (D) Accessibility
2. The process of binding a variable name with an object is called
- (A) Scope (B) Mapping (C) late binding (D) early binding
3. Which of the following is used in programming languages to map the variable and object?
- (A) :: (B) := (C) = (D) ==
4. Containers for mapping names of variables to objects is called
- (A) Scope (B) Mapping (C) Binding (D) Namespaces
5. Which scope refers to variables defined in current function?
- (A) Local Scope (B) Global scope
- (C) Module scope (D) Function Scope
6. The process of subdividing a computer program into separate sub-programs is called
- (A) Procedural Programming (B) Modular programming

### Answer the following questions (2 Marks)

2. Why scope should be used for variable. State the reason.
3. What is Mapping?
5. How Python represents the private and protected Access specifies?

### Answer the following questions (3 Marks)

3. Define Enclosed scope with an example.
4. Why access control is required?
5. Identify the scope of the variables in the following pseudo code and write its output
- ```
color:= 'Red'
mycolor():
b:='Blue'
myfavcolor():
g:='Green'
print color, b, g
myfavcolor()
print color, b
mycolor()
print color
```

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### Answer the following questions (5Marks)

- Write any Five Characteristics of Modules.
- Write any five benefits in using modular programming.

### CHAPTER 4 - ALGORITHMIC STRATEGIES

#### Choose the best answer:

- The word comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khowarizmi is called?

(A) Flowchart (B) Flow (C) Algorithm (D) Syntax

- From the following sorting algorithms which algorithm needs the minimum number of swaps?

(A) Bubble sort (B) Insertion sort  
(C) Selection sort (D) All the above

- Two main measures for the efficiency of an algorithm are

(A) Processor and memory (B) Complexity and capacity  
(C) Time and space (D) Data and space

- The complexity of linear search algorithm is

(A)  $O(n)$  (B)  $O(\log n)$  (C)  $O(n^2)$  (D)  $O(n \log n)$

- From the following sorting algorithms which has the lowest worst case complexity?

(A) Bubble sort (B) Quick sort  
(C) Merge sort (D) Selection sort

- Which of the following is not a stable sorting algorithm?

(A) Insertion sort (B) Selection sort  
(C) Bubble sort (D) Merge sort

- Time complexity of bubble sort in best case is

(A)  $\theta(n)$  (B)  $\theta(n \log n)$  (C)  $\theta(n^2)$  (D)  $\theta(n(\log n)^2)$

- The  $\Theta$  notation in asymptotic evaluation represents

(A) Base case (B) Average case (C) Worst case (D) NULL case

- If a problem can be broken into subproblems which are reused Several times, the problem possesses which property?

(A) Overlapping subproblems (B) Optimal substructure  
(C) Memoization (D) Greedy

- In dynamic programming, the technique of storing the Previously calculated values is called ?

(A) Saving value property (B) Storing value property  
(C) Memoization (D) Mapping

### Answer the following questions (2 Marks)

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