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Question **1**  
Not answered  
Marked out of 1.00

102. How does inheritance relate to abstraction?
- Select one:
- ☐ a. A derived class is an abstraction of all its base classes.
  - ☐ b. A base class is an abstraction of all its derived classes.
  - ☐ c. Inheritance prevents abstraction.
  - ☐ d. Base and derived classes are abstractions of each other.

The correct answer is: A derived class is an abstraction of all its base classes.

Question **2**  
Not answered  
Marked out of 1.00

106. A programmer implements a queue as a singly-linked list. He queue has  $n$  elements. What will be the time complexity to ADD an element to the queue?
- Select one:
- ☐ a.  $O(n)$
  - ☐ b.  $O(n \log_2 n)$
  - ☐ c.  $O(\log_2 n)$
  - ☐ d.  $O(1)$

The correct answer is:  $O(1)$

Question **3**  
Not answered  
Marked out of 1.00

114. A librarian has to rearrange the library books on a shelf in a proper order at the end of each day. Which of the following sorting techniques should be the librarian's ideal choice?
- Select one:
- ☐ a. Selection sort
  - ☐ b. Heap sort
  - ☐ c. Insertion sort
  - ☐ d. Bubble sort

The correct answer is: Insertion sort

Question **4**  
Not answered  
Marked out of  
1.00

113. Which of the following abstract data types can be used to represent a many-to-many relation?

Select one:

- ☐ a. Tree
- ☐ b. Stack
- ☐ c. Queue
- ☐ d. Graph

The correct answer is: Graph

Question **5**  
Not answered  
Marked out of  
1.00

10. A librarian has to rearrange the library books on a shelf in a proper order at the end of each day. Which of the following sorting techniques should be the librarian's ideal choice?

Select one:

- ☐ a. Selection sort
- ☐ b. Heap sort
- ☐ c. Insertion sort
- ☐ d. Bubble sort

The correct answer is: Insertion sort

Question **6**  
Not answered  
Marked out of  
1.00

12. Why is an algorithm designer concerned primarily about the run time and not the compile time while calculating time complexity of an algorithm?

Select one:

- ☐ a. Run time is always more than the compile time.
- ☐ b. Compile time is a function of run time.
- ☐ c. A program needs to be compiled once but can be run several times.
- ☐ d. Compile time is always more than the run time.

The correct answer is: A program needs to be compiled once but can be run several times.

Question **7**  
Not answered  
Marked out of  
1.00

1. Null function is also known as \_\_\_\_\_.

Select one:

- ☐ a. Null Operator
- ☐ b. Void Function
- ☐ c. Anonymous Function
- ☐ d. Generic Function

The correct answer is: Null Operator

Question **8**

Not answered

Marked out of  
1.00

105. Each bucket in a Hash Table is the head of \_\_\_\_\_.

Select one:

- ☐ a. A Heap
- ☐ b. A Stack
- ☐ c. A Queue
- ☐ d. An Array

The correct answer is: An Array

Question **9**

Not answered

Marked out of  
1.00

119. A stack is implemented as a linear array A[0..N-1]. A programmer writes the function given below to pop out an element from the stack.

**Function POP ( top, N)**

```
{  
  if (X)  
  {  
    top = top - 1  
  }  
  else  
  {  
    "Print Underflow"  
  }  
  return top
```

Which of the following should substitute the condition  $\text{!X}$ ?

Select one:

- ☐ a.  $\text{top} >$
- ☐ b.  $\text{top}$
- ☐ c.  $\text{top} > 1$
- ☐ d.  $\text{top}$
- ☐ e. 0

The correct answers are:  $\text{top} >$ , 0

Question **10**

Not answered

Marked out of  
1.00

108. What will be returned if f(a,b) is called in the following functions?

```
function g(int n)
{
  if (n>0) return 1;
  else return -1;
}
function f(int a, int b)
{
  if (a>b) return g(a-b);
  if (a<b) return g(-b+a);
  return 0;
}
```

Select one:

- ☐ a. Always +1
- ☐ b. -1 if a>b, -1 if a
- ☐ c. 1 if a>b, -1 if a
- ☐ d. 0 if a equals b, -1 otherwise

The correct answer is: 0 if a equals b, -1 otherwise

Question **11**

Not answered

Marked out of  
1.00

117. A programmer is making a daaase of animais in a zoo along with their properties. The possible animals are dog, lion and zebra. Each one has attributes herbivors, colorand nocturnal.

The programmer uses the object-oriented programming paradigm for this. How will the system be conceptualized?

Select one:

- ☐ a. Class: Animal; objects: dog, lion and zebra; data members: herbivorous, color and nocturnal
- ☐ b. Class: dog, lion and zebra; objects: Animal; data members: herbivorous, color and nocturnal
- ☐ c. Class: Animal; objects: herbivorous, color and nocturnal; data members: dog, lion and zebra
- ☐ d. None of the above

The correct answer is: Class: Animal; objects: dog, lion and zebra; data members: herbivorous, color and nocturnal

Question **12**

Not answered

Marked out of  
1.00

100. Which of the given two functions can be categorized as procedure?

Select one:

- ☐ a. A function cannot be a procedure
- ☐ b. My Func 1
- ☐ c. My Func 2
- ☐ d. Both MyFunc1 and MyFun2

The correct answer is: My Func 2

Question **13**

Not answered

Marked out of  
1.00

103. A data type is stored as a 6-bit signed integer. Which of the following cannot be represented by this data type?

Select one:

- ☐ a. 32
- ☐ b. -12
- ☐ c. 18
- ☐ d. 0

The correct answer is: 32

Question **14**

Not answered

Marked out of  
1.00

120. What is the difference between a function and a method?

Select one:

- ☐ a. Function contained in an object is called a method
- ☐ b. Function cannot change variables outside its scope unlike method
- ☐ c. Function is a named code unlike method which is a part of an object
- ☐ d. There is no difference between the two

The correct answer is: There is no difference between the two

Question **15**

Not answered

Marked out of  
1.00

118. A programmer writes a program to find an element in the array A[5] with the elements: 8:30 40 45 70. The program is run to find a number  $\hat{x}$ , that is found in the first iteration of binary search. What is the value of  $\hat{x}$ ?

Select one:

- ☐ a. 8
- ☐ b. 40
- ☐ c. 30
- ☐ d. 70

The correct answer is: 40

Question **16**

Not answered

Marked out of  
1.00

110. A sorting mechanism uses the binary tree concept such that any number in the tree is larger than all the numbers in the sub-tree below it. What is this method called?

Select one:

- ☐ a. Insertion sort
- ☐ b. Selection sort
- ☐ c. Heap sort
- ☐ d. Quick sort

The correct answer is: Heap sort

Question **17**

Not answered

Marked out of  
1.00

111. The following operations are performed on an empty stack  $\hat{A}$ .

PUSH( 1)

PUSH( 2)

POP

PUSH(5)

PUSH(6)

POP

What will the stack contain after these operations?

(Note: The top of the stack is underlined in the options below.)

Select one:

- ☐ a. 5 6
- ☐ b. 1 5
- ☐ c. 1 5
- ☐ d. 5 6

The correct answer is: 1 5

Question **18**

Not answered

Marked out of  
1.00

115. Tricha needs to store a list of binary data. Which of the following data types should she use?

Select one:

- ☐ a. Float
- ☐ b. Boolean
- ☐ c. Character
- ☐ d. Integer

The correct answer is: Boolean

Question **19**

Not answered

Marked out of  
1.00

11. A tree has 5 levels and each node has either 4 or no children. All nodes on the same level have the same number of children.

How many nodes are there in the tree?

Select one:

- ☐ a. None of the above
- ☐ b. 341
- ☐ c. 256
- ☐ d. 1024

The correct answer is: 256

Question **20**

Not answered

Marked out of  
1.00

112. What will happen if some indentations are made in some statements of a code written in C++?

Select one:

- ☐ a. Correction of errors in the code
- ☐ b. Lower memory requirement for the code
- ☐ c. Faster execution of the code
- ☐ d. Better readability of the code

The correct answer is: Better readability of the code

Question **21**

Not answered

Marked out of  
1.00

101. Which of the following statements is TRUE about a breadth first search?

Select one:

- ☐ a. Beginning from a node, the nodes are traversed in cyclic order
- ☐ b. None of the above
- ☐ c. Beginning from a node, each adjacent node is fully explored before traversing the next adjacent node
- ☐ d. Beginning from a node, all the adjacent nodes are traversed first

The correct answer is: Beginning from a node, each adjacent node is fully explored before traversing the next adjacent node

Question **22**

Not answered

Marked out of  
1.00

107. Passage

Refer to the pseudocode given in the "Passage". The code is similar to that in C++ and is self-explanatory. An accessible member function and a data member for an object are accessed by the statements `objectname.functionname` and `objectname.datamembername`, respectively. Identify the statement with an error.

Select one:

- ☐ a. None of the above
- ☐ b. Statement 4
- ☐ c. Statement 1
- ☐ d. Statement 3
- ☐ e. Statement 2

The correct answer is: Statement 3

Question **23**

Not answered

Marked out of  
1.00

104.

```
function modify(b,a)
{
    return a - b
}

function calculate()
{
    integer a = 5, b = 12, c
    c = modify(a,b)
    print c
}
```

Select one:

- ☐ a. 7
- ☐ b. 8
- ☐ c. -7
- ☐ d. Error

The correct answer is: 7

Question **24**

Not answered

Marked out of  
1.00

109. In the execution process of a program, this technoque involves the intermediate representation to be compiled to native machine code at runtime. What is the name of this technique?

Select one:

- ☐ a. Run time interpretation
- ☐ b. Just in time compilation
- ☐ c. Static interpretation
- ☐ d. Static compilation

The correct answer is: Just in time compilation

Question **25**

Not answered

Marked out of  
1.00

116. A problem to be solved is broken into a sequence of smaller sub-problems until a stage where the sub-problem can be easlved. What is this design approach called?

Select one:

- ☐ a. None of the above
- ☐ b. Top-Down approach
- ☐ c. Bottom-Up approach
- ☐ d. Procedural programming

The correct answer is: Top-Down approach

[◀ Verbal Test 10](#)[Tech test 2 ▶](#)