Default for CIT237
The default category for questions shared in context 'CIT237'.
Fill in the Blank (FBQs)
FBQ1
A _____ is a program that converts an instruction written in any programming language other than the machine language to an understandable set of codes for the computer.

Translator
1.0000000

0.0000000

0.0000000

0.0000000
FBQ2
A _____ program is a series of steps, each of which performs a calculation, retrieves input, or produces output.

Procedural
1.0000000

0.0000000

0.0000000

0.0000000
FBQ3
Floating-point numbers normally have two parts namely the mantissa and _____.

Exponent
1.0000000

0.0000000

0.0000000

0.0000000
FBQ4
In a programming environment, the _____ will translate a program written in high level language stored in a text mode on a disk to the program stored in a machine-oriented language on a disk.

Compiler
1.0000000

0.0000000

0.0000000

0.0000000
FBQ5
In a programming environment, the _____ loader picks up the machine-oriented

program and combines it with any necessary software to enable the program to be run.

Linker
1.0000000
Loader
1.0000000

0.0000000

0.0000000
FBQ6
In the program development cycle, _____ analysis is where the clear statement of the problem is stated.

Problem
1.0000000

0.0000000

0.0000000

0.0000000
FBQ7
The first generation of computers was coded in _____ language that was specific to each model of computer

Machine
1.0000000

0.0000000

0.0000000

0.0000000
FBQ8
An _____ is a finite sequence of unambiguous instructions/steps for solving a problem in a finite amount of time.

Algorithm
1.0000000

0.0000000

0.0000000

0.0000000
FBQ9
When considering the various stages in algorithm design, the algorithm _____ phase is the testing phase whereby the programmer confirms that the algorithm yields the desired result for the right input in a reasonable amount of time.

Evaluation
1.0000000

0.0000000

0.0000000

0.0000000
FBQ10
When considering the various stages in algorithm design, in the algorithm analysis phase, we check the _____ of the algorithm in terms of time and space.

Efficiency
1.0000000

0.0000000

0.0000000

0.0000000
FBQ11
There are two basic types of data structures namely linear data structures and _____ data structure

Nonlinear
1.0000000
Non-linear
1.0000000
Non linear
1.0000000

0.0000000
FBQ12
A pseudo code is an abbreviated version of an actual _____ code

Computer
1.0000000

0.0000000

0.0000000

0.0000000
FBQ13
Program _____ is an integral component of software development and it is performed to determine the existence, quality, or genuineness of the attributes of the program of application.

Testing
1.0000000
Test
1.0000000

0.0000000

0.0000000
FBQ14
In structural system testing, _____ testing determines that the system still performs with expected volumes.

Stress
1.0000000

0.0000000

0.0000000

0.0000000
FBQ15
In structural system testing, _____ testing determines that the system achieves the desired level of proficiency.

Execution
1.0000000

0.0000000

0.0000000

0.0000000
FBQ16

In structural system testing, _____ testing determines that the system can be returned to an operational status after a failure

Recovery
1.0000000

0.0000000

0.0000000

0.0000000
FBQ17
An algorithm’s _____ efficiency can be measured by counting the number of times the algorithm’s basic operation is executed on inputs of size n

Time
1.0000000

0.0000000

0.0000000

0.0000000
FBQ18
In structural system testing, _____ testing determines that the system is protected in accordance with importance to organisation

Security
1.0000000

0.0000000

0.0000000

0.0000000
FBQ19
Problems that cannot be solved in polynomial time are technically called _____.

Intractable
1.0000000

0.0000000

0.0000000

0.0000000
FBQ20
In functional system testing, _____ testing verifies that anything unchanged still performs correctly.

Regression
1.0000000

0.0000000

0.0000000

0.0000000
FBQ21
In functional system testing, _____ testing determines that the controls reduce system risk to an acceptable level.

Control

1.0000000

0.0000000

0.0000000

0.0000000
FBQ22
_____ testing runs old system and new system and compares results to detect unplanned differences.

Parallel
1.0000000

0.0000000

0.0000000

0.0000000
FBQ23
Program _____ is the procedure of including illustrations or comments to explain lines or segments within the program.

Documentation
1.0000000

0.0000000

0.0000000

0.0000000
FBQ24
Program _____ is the act of ensuring the smooth and continuous working of the program in the nature of business and dynamics of operation.

Maintenance
1.0000000

0.0000000

0.0000000

0.0000000
FBQ25
Floating point numbers normally have two parts: the mantissa (the fractional part) and the _____ .

Exponent
1.0000000

0.0000000

0.0000000

0.0000000
FBQ26
A _____ is data type which consists of a sequence of characters enclosed in single or double quotation marks depending on the programming language.

String
1.0000000

0.0000000

0.0000000

0.0000000
FBQ27
_____ efficiency deals with the space required for an algorithm to run efficiently.

Space
1.0000000

0.0000000

0.0000000

0.0000000
FBQ28
Problems that can be solved in polynomial time are called _____

Tractable
1.0000000

0.0000000

0.0000000

0.0000000
FBQ29
A graph consists of _____ things:

Two
1.0000000
2
1.0000000

0.0000000

0.0000000
FBQ30
_____ is the process of arranging a set of items or objects in increasing or decreasing order.

Sorting
1.0000000

0.0000000

0.0000000

0.0000000
FBQ31
A graph can be defined as the connection of points in a plane called _____

Vertices
1.0000000

0.0000000

0.0000000

0.0000000
FBQ32
Using the divide-and-conquer approach, _____ sort divides its input’s elements according to their position in the array.

Merge
1.0000000

0.0000000

0.0000000

0.0000000
FBQ33
Using the divide-and-conquer approach, _____ sort divides its input’s elements according to value.

Quick
1.0000000

0.0000000

0.0000000

0.0000000
FBQ34
_____ search is a remarkably efficient algorithm for searching in a sorted array. It works by recursively comparing a search key K with the array’s middle element A[m].

Binary
1.0000000

0.0000000

0.0000000

0.0000000
FBQ35
_____ sort works by recursively scanning the entire given list to find its smallest element and exchanges it with the first element, putting the smallest element in its final position in the sorted list.

Selection
1.0000000

0.0000000

0.0000000

0.0000000
FBQ36
_____ sort is a brute-force application to the sorting problem which repeatedly compares adjacent elements of the list and exchanges them if they are out of order

Bubble
1.0000000

0.0000000

0.0000000

0.0000000
FBQ37
The _____ case efficiency of an algorithm is an input (or inputs) of size n for which the algorithm runs the fastest among all possible inputs of that size.

Best
1.0000000

0.0000000

0.0000000

0.0000000
FBQ38
The _____ case efficiency of an algorithm is calculated by dividing all instances of size n into several classes so that for each instance of the class, the number of times the algorithm's basic operation is executed is the same.

Average
1.0000000

0.0000000

0.0000000

0.0000000
FBQ39
The _____ case efficiency of an algorithm is an input (or inputs) of size n for which the algorithm runs the longest among all possible inputs of that size.

Worst
1.0000000

0.0000000

0.0000000

0.0000000
FBQ40
A _____ list is a sequence of zero or more elements called nodes, each containing two kinds of information: some data and one or more pointers to other nodes of the list.

Linked
1.0000000

0.0000000

0.0000000

0.0000000
FBQ41
A _____ is a data structure in which insertion and deletion can only be done at one end (called the TOP).

Stack
1.0000000

0.0000000

0.0000000

0.0000000
FBQ42
A _____ is a data structure with two ends, in which an insertion is made at one end (REAR) and a deletion is done at the other end (FRONT).

Queue
1.0000000

0.0000000

0.0000000

0.0000000
FBQ43
_____ is the process of adding elements to the stack.

PUSH
1.0000000

0.0000000

0.0000000

0.0000000
FBQ44
POP is the process of deleting elements from the _____.

Stack
1.0000000

0.0000000

0.0000000

0.0000000
FBQ45
Hill climbing is an optimisation technique which belongs to the family of _____ search.

Local
1.0000000

0.0000000

0.0000000

0.0000000
FBQ46
A _____ program is a collection of cooperating processes, sharing information with each other from time to time but generally operating asynchronously.

Concurrent
1.0000000

0.0000000

0.0000000

0.0000000
FBQ47
A _____ program is a series of steps, each of which performs a calculation, retrieves input, or produces output.

Procedural
1.0000000

0.0000000

0.0000000

0.0000000
FBQ48
Within the program development cycle, the translation of an algorithm into a programming language is normally called _____

Coding
1.0000000

0.0000000

0.0000000

0.0000000
FBQ49
_____ is a data type consisting of positive and negative whole numbers.

Integer
1.0000000

0.0000000

0.0000000

0.0000000
FBQ50
_____ numbers are data types consisting of numbers with fractional parts.

Real
1.0000000

0.0000000

0.0000000

0.0000000
Multiple Choice Questions (MCQs)
MCQ1
The 1st generation of computers was coded in _____ language.

FORTRAN

0.0000000
CODD

0.0000000
Machine

1.0000000
Set

0.0000000
MCQ2
Which of the following options is NOT a conventional feature which a programming language must possess?

It must have syntactic rules for forming statements.

0.0000000
It must have a vocabulary that consists of letters of the alphabet.

0.0000000

It must be easy to learn.

1.0000000
It must have a language structure, which consists of keywords, expressions and statements.

0.0000000
MCQ3
Which programming methodology is a collection of mathematical functions, each with an input (domain) and a result (range).

Procedural Programming

0.0000000
Logic Programming

0.0000000
Functional Programming

1.0000000
Scientific programming

0.0000000
MCQ4
Which programming methodology is characterised by a collections of objects that interact with each other by passing messages that transform their state?

Procedural Programming

0.0000000
Object-Oriented (OO) Programming

1.0000000
Concurrent Programming

0.0000000
Scientific programming

0.0000000
MCQ5
Which of the options below is NOT a programming methodology?

Procedural Programming

0.0000000
Event Driven Programming

0.0000000
Functional Programming

0.0000000
Scientific programming

1.0000000
MCQ6
Which programming methodology is a collection of cooperating processes, sharing information with each other from time to time but generally operating asynchronously.

Procedural Programming

0.0000000
Concurrent Programming

1.0000000
Event Driven Programming

0.0000000
Scientific programming

0.0000000
MCQ7
____ is the major difference between interpreters and compliers?

Interpreters convert programs in high-level language to machine language while compliers convert low-level language to machine language

0.0000000
Interpreters convert programs in low-level language to machine language while compliers convert high-level language to machine language

0.0000000
The compiler converts the entire source program into object code before the entire program is executed while the interpreter translates the source instructions and executes line by line

1.0000000
The compiler translates the source instructions line by line while the interpreter converts the entire source program into object code before the entire program is executed

0.0000000
MCQ8
Which of the following algorithms does NOT adopt the strategy of divide-and-conquer?

quick search

1.0000000
merge sort

0.0000000
quick sort

0.0000000
binary search

0.0000000
MCQ9
Which of the following options is NOT found in a typical programming environment?

The Linker/Loader

0.0000000
The Compiler

0.0000000
The Editor

0.0000000
The Assembler

1.0000000
MCQ10
Which of the following options is the first stage of the program development cycle?

Documentation

0.0000000
Testing and Debugging

0.0000000
Problem definition

1.0000000
Design

0.0000000
MCQ11
The planning of the solution to the problem in the first stage of the program development cycle takes place at which of the following stages?

Documentation

0.0000000
Testing and Debugging

0.0000000
Problem analysis

0.0000000
Design

1.0000000
MCQ12
Which stage of the program development cycle consists of organising all the materials that describe the program?

Documentation

1.0000000
Testing and Debugging

0.0000000
Problem definition

0.0000000
Coding

0.0000000
MCQ13
Normal program execution typically consists of four (4) stages. Which of the following options is NOT one of these stages?

The Program (Source Code)

0.0000000
The Debugging Process

1.0000000
The Object Code

0.0000000
The Output

0.0000000
MCQ14
Which of the following options is NOT a major consideration when writing good programs?

Naming convention

0.0000000
Language selection

1.0000000
Formatting and Indentation

0.0000000
Classes

0.0000000
MCQ15
Which of the following options is NOT true about algorithms?

An algorithm must have a beginning and an end.

0.0000000
Each step of an algorithm should be ambiguous.

1.0000000
Several algorithms for solving the same problem may exist.

0.0000000
Algorithms must terminate after a reasonable period of time.

0.0000000
MCQ16
According to the flowchart symbols adopted by the American National Standards Institute (ANSI), which of the following options depicts the symbol used to represent the beginning (start) or the end (stop) of a task?

0.0000000

0.0000000

0.0000000

1.0000000
MCQ17
According to the flowchart symbols adopted by the American National Standards Institute (ANSI), which of the following options depicts the symbol used for arithmetic and data manipulation operations with the instructions listed inside the symbol?

0.0000000

0.0000000

1.0000000

0.0000000
MCQ18
According to the flowchart symbols adopted by the American National Standards

Institute (ANSI), which of the following options depicts the symbol that indicates the flowchart continues on a second page?

1.0000000

0.0000000

0.0000000

0.0000000

MCQ19

According to the flowchart symbols adopted by the American National Standards Institute (ANSI), which of the following options depicts the symbol used for input and output operations, such as reading and printing with the data to be read or printed are described inside?

0.0000000

0.0000000

0.0000000

1.0000000

MCQ20

The following options are all components of Structural system testing EXCEPT?

Recovering testing

0.0000000

Requirement testing

1.0000000

Operations testing

0.0000000

Security testing

0.0000000

MCQ21

The following options are all components of Functional system testing EXCEPT?

Parallel testing

0.0000000

Regression testing

0.0000000

Stress testing

1.0000000

Control testing

0.0000000

MCQ22

Which of the following options is NOT a major standard integer data type?

Byte

0.0000000
Word

0.0000000
Single

1.0000000
Short int

0.0000000
MCQ23
The following options are all examples of the standard real data type EXCEPT?

Single

0.0000000
Double

0.0000000
Word

0.0000000
Extended

1.0000000
MCQ24
_____ can be defined as sequences of objects all of which are of the same type that are collectively referred to by the same name.

Array

1.0000000
Linked list

0.0000000
Stack

0.0000000
Heap

0.0000000
MCQ25
Which of the following options is NOT a linear data structure?

Stack

0.0000000
Queue

0.0000000
Heap

0.0000000
Set

1.0000000
MCQ26
Which of the following options is NOT a method used to measure the efficiencies of algorithms?

Worst-Case

0.0000000
Best-Case

0.0000000
Average-Case

0.0000000
Last-Case

1.0000000
MCQ27
Which of the following is NOT a reason for sorting?

For orderly analysis and presentation of items.

0.0000000
For locating an item or items within a set.

0.0000000
To introduce duplicate values into a set.

1.0000000
Finding the intersection of two or more sets.

0.0000000
MCQ28
Which of the following options describes the algorithm outlined below?

Divide the problems into several, smaller sub-instances;

Independently solve these sub-instances;

Combine the solutions of the sub-instances to yield a solution for the original problem.

Bubble sort algorithm

0.0000000
Divide and conquer algorithm

1.0000000
Merge sort algorithm

0.0000000
Split – merge sort algorithm

0.0000000
MCQ29
When analysing the efficiency of an algorithm, which of the following options is NOT a basic operation?

Variable assignment

0.0000000
A comparison between two variables

0.0000000
An arithmetic operation between two variables

0.0000000
Sorting variables

1.0000000
MCQ30
Which of the following options describes an algorithm which CANNOT be solved in polynomial time?

Sorting

0.0000000
Searching

0.0000000
Checking connectivity

0.0000000
Graph colouring

1.0000000
MCQ31
What is the main weakness of using a flowchart?

Too technical to apprehend

0.0000000
Requires skills to develop

0.0000000
Difficult to comprehend when program is large

1.0000000
Used only during coding

0.0000000
MCQ32
The results of a worst-case analysis of an algorithm gives a(n) _____ bound on the running time on the worst-case inputs.

Upper

1.0000000
Lower

0.0000000
Exact

0.0000000
Average

0.0000000
MCQ33
When considering linear data structures, which of the following operates a Last-in-First-out (LIFO) scheme?

Heap

0.0000000
Queue

0.0000000
Array

0.0000000
Stack

1.0000000

MCQ34
Which of the following linear data structures is based on a First-in-First-out (FIFO) principle.

Heap

0.0000000
Queue

1.0000000
Array

0.0000000
Stack

0.0000000
MCQ35
Which of the following options show the correct contents of a stack after the following operations: PUSH (A), PUSH (B), POP, PUSH(C), PUSH (D), POP

0.0000000

0.0000000

0.0000000

1.0000000
MCQ36
When comparing the run time of functions based on input size n, which of the following function will experience the slowest growth?

n2

0.0000000
n!

0.0000000
log2n

1.0000000
2n

0.0000000
MCQ37
When comparing the run time of functions based on input size n, which of the following function will experience the fastest growth?

n2

0.0000000
n

0.0000000
log2n

0.0000000
2n

1.0000000
MCQ38
Which of the following options is the most precise asymptotic symbol for representing the order of growth of algorithms?

0-Notation (‘is theta of’)

0.0000000
O-Notation (‘big oh of’)

0.0000000
Ω-Notation (‘is omega of’)

1.0000000
o-Notation (‘little of of’)

0.0000000
MCQ39
For the algorithm given below, how many iterations are involved?

```
m := 3;

n := 5;

loop

n := n - 1;

m := m + 1;

until (m=5 or n=0)
```

4 iterations

0.0000000
3 iterations

0.0000000
2 iterations

1.0000000
5 iterations

0.0000000
MCQ40
Which of the following options describes a decision problem which is known NOT to be in NP (it has been proven to be unsolvable)?

Halting problem

1.0000000
Travelling salesman

0.0000000
Graph colouring

0.0000000
Knapsack problem

0.0000000
MCQ41
Given the statements below about a decision problem D, which of the following options is correct?

D belongs to the class NP;

Every problem in NP is “polynomially” reducible to D.

D is NP-complete

1.0000000
D is tractable

0.0000000
Solution to D cannot be verified in polynomial time

0.0000000
D is solvable in polynomial time

0.0000000
MCQ42
Given an instance of the problem to be solved, which of the following statements is NOT a fundamental step of the divide-and-conquer algorithm?

Split this into several smaller sub-instances

0.0000000
Combine the solution of sub-instances

0.0000000
Independently solve each sub-instance

0.0000000
Find the average of the sub-instances

1.0000000
MCQ43
The efficiency of the ‘bubble sort’ algorithm is given by?

0(n2)

1.0000000
0(n)

0.0000000
0(log2n)

0.0000000
0(2n)

0.0000000
MCQ44
Which of the following options is a type (sub-set) of the ‘Knight’s tour’ problem?

Hamiltonian path problem

1.0000000
Travelling salesman problem.

0.0000000
Graph colouring problem

0.0000000
Knapsack problem

0.0000000
MCQ45
The following options are all examples of non-linear data structures EXCEPT:

Graph

0.0000000

Heap

1.0000000
Tree

0.0000000
Forest

0.0000000
MCQ46
Which programming methodology is a continuous loop that responds to prompts that are generated in an unpredictable order?

Procedural Programming

0.0000000
Logic Programming

0.0000000
Functional Programming

0.0000000
Event-driven programming

1.0000000
MCQ47
Which of the following options is NOT a valid reason for program maintenance?

Changes in nature of business

0.0000000
Dynamics of operation

0.0000000
Changes in technology

0.0000000
Changes in computer operator

1.0000000
MCQ48
Which of the following options is NOT a string data type?

“Abiola”

0.0000000
“I am a man”

0.0000000
“1999”

0.0000000
1999

1.0000000
MCQ49
At what stage of the system development life cycle are algorithms useful?

Documentation

0.0000000
Coding

0.0000000

Design

1.0000000
Analysis

0.0000000
MCQ50
An algorithm’s time efficiency can be measured by counting _____ on inputs of size n.

the number of times the algorithm’s basic operation is executed

1.0000000
the number of terms in the algorithms’ function

0.0000000
the number of constants in the algorithm’s basic operation

0.0000000
the size of the innermost loop of the basic operation

0.0000000