

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 inputâ€™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 inputâ€™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 compilers?

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

0.0000000

Interpreters convert programs in low-level language to machine language while compilers 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?

n^2

0.0000000

$n!$

0.0000000

$\log_2 n$

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?

Θ-Notation (Θ is theta of Θ™)

0.0000000
O-Notation (O is big oh of Θ™)

0.0000000
Ω-Notation (Ω is omega of Θ™)

1.0000000
o-Notation (o is little of Θ™)

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 $\hat{=}$ polynomially $\hat{=}$ 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?

$\tilde{O}(n^2)$

1.0000000

$\tilde{O}(n)$

0.0000000

$\tilde{O}(\log 2n)$

0.0000000

$\tilde{O}(2n)$

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 algorithm's 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