

Level 1

Introduction and Main

Q1:

- V1: How many bytes are in a KB?
 - o T: 1,000 bytes
 - o F: 1,000,000 bytes
 - o F: 1,000,000,000 bytes
- V2: How many bytes are in a MB?
 - o F: 1,000 bytes
 - o T: 1,000,000 bytes
 - o F: 1,000,000,000 bytes
- V3: How many bytes are in a GB?
 - o F: 1,000 bytes
 - o F: 1,000,000 bytes
 - o T: 1,000,000,000 bytes

Q2:

- V1: What part of a computer manipulates and stores data?
 - o T: Hard Drive
 - o F: CPU
 - o F: Keyboard
- V2: What part of a computer processes data?
 - o F: Hard Drive
 - o T: CPU
 - o F: Keyboard
- V3: What part of a computer receives input?
 - o F: Hard Drive
 - o F: CPU
 - o T: Keyboard

Q3:

- V1: The third phase of software engineering that we are focusing on is _____.
 - o T: Coding
 - o F: Analyzing
 - o F: Designing
- V2: The physical parts of the computer are called _____.
 - o F: Software
 - o T: Hardware

- F: Computer Parts
- V3: What type of language is C?
 - F: Beginner
 - F: Case-Insensitive
 - T: Case-sensitive

Q4:

- V1: How many bits are in a byte?
 - T: 8 bits
 - F: 2 bits
 - F: 1 bit
- V2: When running, every C program has and starts executing at the _____.
 - F: First Include
 - T: Main Function
 - F: First Comment
- V3: What part of a computer presents output?
 - F: CPU
 - F: Mouse
 - T: Monitor

Variables and Expressions

Q1:

- V1: In C, the syntax to declare an integer variable called x is
 - T: int x;
 - F: num x;
 - F: var x;
- V2: In C, the syntax to declare a decimal variable called num is
 - F: int num;
 - T: double num;
 - F: decimal num;
- V3: In C, the syntax to declare a character variable called c is
 - F: letter c;
 - F: character c;
 - T: char c;

Q2:

- V1: Which header file should be included to get access to input and output functions?
 - T: stdio.h
 - F: math.h

- F: memory.h
- V2: Which is the C command to show text on the screen/monitor??
 - F: print
 - T: printf
 - F: cout
- V3: What place holder in a format string will print out a double/decimal value??
 - F: %d
 - F: %i
 - T: %lf

Q3:

- V1: In order to read in and manipulate data, we need ___ to store values.
 - T: variables
 - F: numbers
 - F: words
- V2: Each statement in a C program should end with what??
 - F: Period (.)
 - T: Semicolon (;)
 - F: Colon (:)
- V3: Which statement is a complete assignment of an integer value to a variable called x??
 - F: x = 100.1;
 - F: x = '100';
 - T: x = 100;

Input and Operations

Q1:

- V1: In programming, what is the highest order of operations?
 - T: Groupings
 - F: Addition and Subtraction
 - F: Powers and Functions
- V2: In programming, what is the lowest order of operations?
 - F: Groupings
 - T: Addition and Subtraction
 - F: Powers and Functions
- V3: What does this expression evaluate to?
 $4 * 3 / 6 - 5 \% 3 + 1$
 - F: 5
 - F: 0
 - T: 1

Q2:

- V1: Which line reads an integer into a variable?
 - o T: scanf("%d", &i);
 - o F: scanf("%lf", &num);
 - o F: scanf("%c", &letter);
- V2: Fill in the blank to read a decimal number into a variable: scanf("&__",&number);
 - o F: int
 - o T: lf
 - o F: d
- V3: The scanf command reads up to the __.
 - o F: End of the Sentence
 - o F: First Semicolon
 - o T: First White Space

Q3:

- V1: In programming, what side of an assignment is evaluated first?
 - o T: Right
 - o F: Left
 - o F: Middle
- V2: What is one acronym for programming order of operations?
 - o F: MEGS
 - o T: GEMS
 - o F: SDLC
- V3: In a C expression, what is %?
 - o F: Division
 - o F: Multiplication
 - o T: Modulus

Level 2

Conditionals

Q1:

- V1: Which is the C symbol for logical and?
 - T: &&
 - F: !
 - F: ||
- V2: Which is the C symbol for logical not?
 - F: &&
 - T: !
 - F: ||
- V3: Which is the C symbol for logical or?
 - F: &&
 - F: !
 - T: ||

Q2:

- V1: Which numerical value is considered 'true'?
 - T: 1
 - F: 0
 - F: -1
- V2: Which numerical value is considered 'false'?
 - F: 1
 - T: 0
 - F: -1
- V3: Which is NOT a conditional statement?
 - F: if-else
 - F: switch
 - T: printf

Q3:

- V1: A switch function can have _____ case values.
 - T: Multiple
 - F: One
 - F: None
- V2: The expression at the start of a switch statement must evaluate to an integer or a _____.
 - F: double

- T: character
 - F: float
- V3: What are the multiple statements of code to be run in a conditional contained in?
 - F: // (Double Slashes)
 - F: () (Parenthesis)
 - T: {} (Curly Braces)

Functions

Q1:

- V1: How many values can be returned from a function?
 - T: One
 - F: Many
 - F: None
- V2: How many variables can a function take in?
 - F: One
 - T: Many
 - F: None
- V3: A _____ is a set of lines of code that can be called to be executed from another location in a program and may have inputs and an output.
 - F: Conditional
 - F: Variable
 - T: Function

Q2:

- V1: Typically, in C, functions that you will write should be _____ unless you use prototypes.
 - T: Above Main
 - F: Beneath Main
 - F: Anywhere in Main
- V2: A function that starts out with “int addition (int a, int b, int c)” will take in how many values?
 - F: Four
 - T: Three
 - F: One
- V3: A function that starts with “double squareRoot (double x, double y)” is called a what type function?
 - F: Square
 - F: Variable
 - T: Double

Loops

Q1:

- V1: When are loops used?
 - o T: when some code will be run multiple times
 - o F: in the beginning of programs
 - o F: at the end of programs
- V2: Which is NOT a loop in the C language?
 - o F: do-while
 - o T: do-until
 - o F: while
- V3: In a loop, the code will execute as long as the condition is _____.
 - o F: Even
 - o F: False
 - o T: True

Q2:

- V1: If code in a loop will be executed at least one time, then a _____ loop may be more appropriate.
 - o T: do-while
 - o F: while
 - o F: for
- V2: Which is the fundamental loop for most programming languages?
 - o F: do-while
 - o T: while
 - o F: for
- V3: Which type of loop is often used to walk through each element of an array?
 - o F: do-while
 - o F: while
 - o T: for

Q3:

- V1: Assuming “**int n=1;**” is already declared, which loop will run exactly 10 times?
 - o T: for (n=1; n<11; n++)
 printf (" hi ");
 - o F: while (n < 10)
 n = n + 1;
 - o F: for (n=0; n<=10; n++)
 printf (" bye ");
- V2: When do loop (and if-else) statements need { and } ?

- F: always needed
 - T: to execute multiple commands
 - F: to run just once
- V3: What are the three things in the start of a for-loop?
`for (____; ____; ____)`
 - F: verify; check; modify
 - F: start; condition; end
 - T: initialize; condition; increment

Level 3

Arrays

Q1:

- V1: How many dimensions is this array?
`char multiDim [5] [10] [2] [20];`
 - T: 4
 - F: 37
 - F: 2000
- V2: What is the index of the first position in an array?
 - F: 1
 - T: 0
 - F: -1
- V3: How many characters can be stored in this array?
`char multiDim [5] [10] [2] [20];`
 - F: 4
 - F: 37
 - T: 2000

Q2:

- V1: Which type of loop is usually used to walk through each element of an array?
 - T: for
 - F: while
 - F: do-while
- V2: What symbols go in this array declaration?
`double anArray_30_;`
 - F: {} (Curly Braces)
 - T: [] (Brackets)
 - F: () (Parenthesis)
- V3: Fill in the blank in the following line of code creating an array:
`int anArray [____] = {val1, val2, val3};`
 - F: val
 - F: int
 - T: 3

Q3:

- V1: Fill in the blank in the following line of code creating an array:
`_____ arrayName [2] = {'F', 'T'};`
 - T: char

- F: array
 - F: int
- V2: Which is the correct way to create an array of floating-point values of length 50?
 - F: arrayName [50] [double];
 - T: double arrayName [50];
 - F: arrayName[50] = double;
- V3: What is the correct way to declare an integer array with 7 values?
 - F: number int [7];
 - F: int [7] numbers;
 - T: int numbers [7];

Strings - Character Arrays

Q1:

- V1: Which symbol is used for the end of a string for printing, also called the null character?
 - T: \0
 - F: \n
 - F: ”
- V2: A character array in C can be treated as a _____ or set of words.
 - F: char
 - T: string
 - F: function
- V3: Which of the following is a string value in C?
 - F: 123
 - F: '123'
 - T: "123"

Q2:

- V1: A constant string value has _____ around it.
 - T: “” (Double Quotes)
 - F: () (Parenthesis)
 - F: ‘’ (Single Quotes)
- V2: What is the name of header file to give access to string functions?
 - F: stdio.h
 - T: string.h
 - F: stdin.h
- V3: Which command is used to compare strings?
 - F: strlen
 - F: strcat
 - T: strcmp

Q3:

- V1: Which command returns the length of a string?
 - T: strlen
 - F: strcat
 - F: strcmp
- V2: Which command is used to append two strings together?
 - F: strlen
 - T: strcat
 - F: strcmp
- V3: Which command copies the value of one string to another string
 - F: strncpy
 - F: strcmp
 - T: strcpy

Q4:

- V1: Which command copies a substring into another string?
 - T: strncpy
 - F: strcmp
 - F: strcpy
- V2: What value is returned by strlen for:
`char astring[30] = "programming";
strlen (astring);`
 - F: 12
 - T: 11
 - F: 10
- V3: What value does strcmp return if the two string values are the same?
 - F: 1
 - F: -1
 - T: 0

Addresses/Pointers

Q1:

- V1: Fill in the blank for this pointer declaration
`int __ptrNum;`
 - T: *(Asterisk)
 - F: & (Ampersand)
 - F: % (Modulus)
- V2: Which symbol is used in front of a variable name to mean the address of the variable?

- F: * (Asterisk)
 - T: & (Ampersand)
 - F: % (Modulus)
- V3: The left-hand side of any assignment statement in C must be a _____.
 - F: File Path
 - F: Location on Desktop
 - T: Location in RAM

Level 4

Enumerate and Structures

Q1:

- V1: Which declaration command can be used to create words as values?
 - o T: enum
 - o F: struct
 - o F: arr
- V1: What operator is used to access fields in a structure?
 - o F: * (Asterisk)
 - o T: . (Period)
 - o F: & (Ampersand)
- V3: What variable type allows multiple type values in it?
 - o F: array (arr)
 - o F: integer (int)
 - o T: structure (struct)

Q2:

- V1: In an enum, the values behind the words are integers.
 - o T: True
 - o F: False
 - o F: Maybe
- V2: Enum values cannot be used in case values in switch statements.
 - o F: True
 - o T: False
 - o F: Maybe
- V3: You can create arrays of structures.
 - o T: True
 - o F: False
 - o F: Maybe

File Input and Output

Q1:

- V1: Which command is used to open a file?
 - o T: fopen
 - o F: fclose
 - o F: fgets
- V2: For every fopen command in a program, there should be an ____ command?
 - o F: fopen

- T: fclose
 - F: fgets
- V3: Which command writes text to a file?
 - F: printf
 - F: fprintf
 - T: fprintf

Q2:

- V1: Which command reads lines of text from a file?
 - T: fgets
 - F: fclose
 - F: fopen
- V2: Select the code that declares a pointer to a file?
 - F: *afile FILE;
 - T: FILE *afile;
 - F: afile *file;
- V3: To find a location of file with its path, in every place there is a \, we need to change it to ____.
 - F: -
 - F: /
 - T: \\

Object Oriented Programming

Q1:

- V1: What are the 4 methods in OOP?
 - T: Inheritance; Abstraction; Encapsulation; Polymorphism
 - F: Analyze; Design; Code; Test
 - F: Input; Output; Process; Storage
- V2: What is an Object in OOP?
 - F: A variable that stores a number.
 - T: Anything that has attributes and can perform methods.
 - F: A string that states the name and location of a variable.
- V3: What is not an advantage of OOP?
 - F: Efficiency
 - F: Reusability
 - T: Simpler