

Midterm1 post-tests

Which statement is correct?

Select one:

a.

Transposition Cipher substitutes characters in the original message according to a fixed scheme.

cross out

b.

Using matrix transpose, Transposition Cipher is based on linear algebra.

cross out

c.

Transposition Cipher shifts characters around according to a regular scheme so that the result is a permutation of the original message.

cross out

d.

Transposition Cipher uses a public key to encode messages.

The correct answer is: Transposition Cipher shifts characters around according to a regular scheme so that the result is a permutation of the original message.

An early version of transposition cipher was

Select one:

a.

A table of the alphabet in Morse Code that was shifted by a certain number of positions and used to substitute letters from the message.

cross out

b.

the Caesar Cipher used by Julius Caesar with a shift of 3 to protect messages of military significance.

cross out

c.

A polyalphabetic substitution in a "tableau" where rows are simply shifted to the left by certain positions and letters are coded by their positions in the row.

cross out

d.

A paper wrapped around a stick of a given thickness and a message was written on the paper. Once unwrapped, the message was unreadable.

The correct answer is: A paper wrapped around a stick of a given thickness and a message was written on the paper. Once unwrapped, the message was unreadable.

You Can use a key for coding and decoding. What is false about this key?

Select one:

a.

The key is a string

cross out

b.

The key can have digits

cross out

c.

The key can be of any length

cross out

d.

The key needs to be at least 5 characters long and up to 256

The correct answer is: The key needs to be at least 5 characters long and up to 256

What is Data Mining used for?

Select one:

a.

Doing advanced statistics on databases.

cross out

b.

Searching very large databases.

cross out

c.

Synonymous with Artificial Intelligence, it makes computers smarter.

cross out

d.

Extracting actionable knowledge from data.

The correct answer is: Extracting actionable knowledge from data.

Which statement is NOT correct?

Select one:

a.

Using Data Structures can make a program more difficult to read and, ultimately, maintain.

cross out

b.

Choosing the right Data Structure can make a significant difference in the required memory space to run a program.

cross out

c.

Having the appropriate Data Structure can impact the speed at which a program executes.

cross out

d.

Data Structures are fundamental in programming at all levels regardless of the programming language.

The correct answer is: Using Data Structures can make a program more difficult to read and, ultimately, maintain.

Objects and classes are **primarily** useful to implement what computing science principle in Python?

Select one:

a.

Algorithmic complexity analysis

cross out

b.

String formatting

cross out

c.

Abstraction (hiding the implementation)

cross out

d.

Recursion

The correct answer is: Abstraction (hiding the implementation)

What is the next term in this Fibonacci sequence?

- 34
- 55
- 89

- 144

Select one:

a.

169

cross out

b.

192

cross out

c.

233

cross out

d.

256

The correct answer is: 233

What is **NOT** true about methods in Python?

Select one:

a.

An instance method can be defined outside of a class definition.

cross out

b.

A method defines the behaviour of an object.

cross out

c.

An instance method takes an instance of the class as its first argument, called `self`

cross out

d.

A method is defined similar to a function, but inside a class definition.

cross out

The correct answer is: An instance method can be defined outside of a class definition.

I want to store a different colour for each individual `Die` object, so that I can display that `Die` later with that colour. What **must** I add to my class?

Select one:

a.

A comment above the class indicating what colour it should be.

cross out

b.

An additional attribute called `colour` to the existing `__init__()` method.

cross out

c.

An additional `__init__()` method that takes `colour` as its only argument.

cross out

d.

A new object called `colour`, instantiated as `colour = Die('blue')`

cross out

The correct answer is: An additional attribute called `colour` to the existing `__init__()` method.

Which statement is correct?

Select one:

a.

All programming languages have built-in support for ADT construct.

cross out

b.

The ADT construct is supported by classes, objects, and methods.

cross out

c.

An ADT removes a layer of security by allowing data to be changed by outside programs in unexpected and possibly harmful ways.

cross out

d.

An ADT is defined in terms of its implementation in a specific programming language.

The correct answer is: The ADT construct is supported by classes, objects, and methods.

Chose the WRONG statement. The gearbox is used as a metaphor for encapsulation because

Select one:

a.

a mechanic can replace a gearbox with a different model of gearbox; as long as it uses the same stick shift, I can still drive my car.

cross out

b.

we don't need to know the relationship between the main shaft and clutch to be able to shift gears.

cross out

c.

drivers, in general, don't understand the inner workings of a gearbox.

cross out

d.

it's easy for anyone to open up a gearbox and make changes to how it operates.

The correct answer is: it's easy for anyone to open up a gearbox and make changes to how it operates.

An Abstract Data Type is a type defined in terms of

Select one:

a.

its data items and associated operations.

cross out

b.

the implementation of its operations.

cross out

c.

the data structure needed to store the class attributes.

cross out

d.

its data items only.

The correct answer is: its data items and associated operations.

Why is Encapsulation important?

Select one:

a.

To protect against network intrusion attacks.

cross out

b.

To separate implementation details from behaviour.

cross out

c.

To force programmers to program in stages.

cross out

d.

To allow non-programmers to program.

The correct answer is: To separate implementation details from behaviour.

If I successively store a, b, c, and d in a stack, when I retrieve them I get back:

Select one:

a.

a, b, c, d from the smallest to the largest

cross out

b.

a, b, c, d in random order

cross out

c.

a, then b, then c, then d

cross out

d.

d, then c, then b, then a

The correct answer is: d, then c, then b, then a

The event "hole caused in pipe" was passed by welder to the supervisor

Select one:

a.

because the pipe with the hole has to now be replaced.

cross out

b.

because the welder is already dealing with broken electrode exception and dripping metal exception.

cross out

c.

because the exception was not planned to be dealt with by welder.

cross out

d.

because the exception is more dangerous than just dripping metal.

The correct answer is: because the exception was not planned to be dealt with by welder.

For each method being executed

Select one:

a.

a call frame for it is pulled from the call stack

cross out

b.

a call frame is pushed to the call stack

cross out

c.

a call frame is pushed in the call stack if no exception is thrown

cross out

d.

a call frame for it is pushed to the call stack after the method ends

The correct answer is: a call frame is pushed to the call stack

What is true about Finally?

Select one:

a.

Finally is mandatory to clean up used resources before a crash takes place.

cross out

b.

Finally clause is executed when no exceptions are thrown.

cross out

c.

Finally clause is executed only when an exception has been handled.

cross out

d.

Finally clause is executed no matter what happens.

The correct answer is: Finally clause is executed no matter what happens.

What is not in a call frame?

Select one:

a.

Address of calling method

cross out

b.

Argument values

cross out

c.

Local Variables

cross out

d.

Global variables

The correct answer is: Global variables

Pass in a matching except

Select one:

a.

passes the exception to the calling method.

cross out

b.

allows to ignore an exception and proceed with the execution of the code.

cross out

c.

passes the exception to the next matching except clause in the list of excepts.

cross out

d.

ignores the finally clause.

The correct answer is: allows to ignore an exception and proceed with the execution of the code.