Question 1

What is the standard format of Behavioral Driven Development (BDD)?

A) Given, What, Then

B) Where, When, How

C) What, When, Then

D) Given, When, Then

Question 2

What happens if a method is not defined for a given object?

A) The program will crash

B) An AttributeError will be raised at run time

C) Nothing will happen

D) The program will go into an endless loop

Question 3

Why should a programmer use version control?

A) You can revert to working code if something goes wrong

B) You can try new things without messing up existing code

C) With a big team, many people may work on the same file

D) All of the above

Question 4

In Python, must every class have a constructor?

A) Yes, one will be created automatically

B) No, it is not mandatory to define a constructor

C) Yes, but if you do not define a constructor, a default constructor with no instance variables will be created

D) No, but if you do not define a constructor, a default constructor with no instance variables will be created, which will be useless

Question 5

How should we run an effective software test?

A) We should take 8 weeks to design a test, run it 1000 times, passing all the results to the developers so they can see how much work is needed

B) No need for design, simply run a short test

C) We need to design a good test, automate it, run it on the software, and record the results

D) We should design a test and run it manually

Question 6

Does everyone use broadband to access the internet?

A) Yes, as only a small percentage of the world’s population use mobile access to it

B) No, a large proportion of the world’s population use mobile networks to access

C) Yes, if you do not count corporate access for people at work and in education

D) No, because most people use fiber instead of broadband

Question 7

When would a programmer make use of an abstract class?

A) When they want to avoid use of multiple inheritance

B) When they wish to specify that a particular method is required in a subclass

C) When they do not want to specify an explicit initializer

D) When they want to reduce the number of objects in their solution

Question 8

Classes should…

A) Should have deep hierarchies of subclasses

B) Should always use inheritance

C) Should be closely coupled to other objects

D) Have a single responsibility as far as possible

Question 9

Sequence diagrams…

A) Are a useful way to design forms on websites

B) Are a useful way to experiment with numbering

C) Are a useful way to experiment with message passing between software components

D) Are a useful way to experiment with software components

Question 10

Is Flask opinionated and requires you to create your application following specific rules?

A) Yes, it is opinionated, so that it can build on the wisdom of all developers

B) No, you are free to decide how you want to create and structure the application

C) Yes, that way the framework makes it easy to get started

D) No, you are free to decide how you want to create the application, but must use the core structure

Question 11

All HTML and CSS in Flask apps…

A) Can be done in methods, or by using files in the folder

B) Can be done in decorated route methods

C) Can be done in decorated route methods, or by using files in the templates folder

D) Can be done using files in the templates folder

Question 12

Databases in Flask are…

A) Hard to do, with only a few options available

B) Only possible using SQLite3

C) Left to the developer to implement as they desire

D) Easy with an integrated object-relational mapping component

Question 13

Red, Green, Refactor…

A) Is a way to remember writing code: Write a failing test, write code for the test, then refactor your code before moving to the next bit of code

B) Is a way to remember the TDD/BDD approach: Write a test, write code to pass the test, then refactor your test before moving to the next bit of code

C) Is a way to remember the TDD/BDD approach: Write a failing test, write code to pass the test, then refactor your code before moving to the next bit of code

D) Is a way to remember the development approach: Write a test, write code to pass the test, then refactor your code before moving to the next bit of code

Question 14

Testing is…

A) Something that requires special skills

B) Something that we consider at the end of development

C) Something that informs our application from the start

D) Optional

Question 15

Which of the following statements is wrong about inheritance?

A) Inheritance is one of the features of OOP

B) Private members of a class can be inherited and accessed

C) The inheriting class is called a subclass

D) Protected members of a class can be inherited

Question 16

What is Flask?

A) A Python library for database applications

B) A Python language framework for building web applications

C) A JavaScript language framework for building web applications

D) A Python library for web pages

Question 17

Flask passes variables…

A) Via parameters in a method

B) Via the return function of a method

C) Via parameters to a web page as part of the return value for a method

D) Via parameters to a web page

Question 18

Deliberate discovery is…

A) A type of test-driven development

B) A type of acceptance test

C) A good way to explore scenarios in the application so that we know what to test

D) A good way to explore scenarios in the application, so that we know what is needed for the database

Question 19

Flask lets you display variables in the HTML…

A) By displaying them wrapped in [{ variable }]

B) By displaying them wrapped in {{ variable }}

C) By displaying them wrapped in [[ variable ]]

D) By displaying them wrapped in {{ “variable” }}

Question 20

MVC stands for…

A) None of these

B) Model-View-Constant

C) Model-View-Controller

D) Modern-View-Controller

Question 21

The Flask web server…

A) Is called gunicorn (green unicorn)

B) Is good for development and production

C) Runs on port 5000 by default

D) Runs on port 3000 by default

Question 22

In the Single Responsibility Principle, the responsibility for a class is…

A) Simple

B) Double

C) Single

D) Defined

Question 23

Behave is…

A) A Python library for test-driven development

B) A JavaScript library for behavior-driven development

C) A Python library for web applications

D) A Python library for behavior-driven development

Question 24

Which decorator in Flask is used to bind a URL to a function?

A) Rend()

B) Write()

C) Route()

D) Read()

Question 25

Flask offers MVC…

A) As an option for the database

B) As an option for page templates

C) If you want to write it yourself

D) Out of the box, as a default Flask app

Question 26

System and integration testing…

A) Is optional to ensure that the application behaves as expected

B) Is not required if the unit tests behave as expected

C) Is required to ensure that the application behaves as expected

D) Is not required if the functional tests behave as expected

Question 27

In Python, do you need to handle errors, and why?

A) No, Python will automatically fix all errors

B) Yes, if you want to avoid crashes

C) No, Python will analyze the error and tell you what to do

D) Not really, Python always knows what to do with any error

Question 28

What are the methods which begin and end with two underscore characters called?

A) Additional methods

B) Special methods

C) Inbuilt methods

D) User-defined methods

Question 29

Which of the following applications may use a stack?

A) Compiler Syntax Analyzer

B) Tracking of local variables at run time

C) A parentheses balancing program

D) All of the above

Question 30

What happens with the following code? List = [32, 128, 256, 28, 16]

A) 128

B) Error

C) We assign the list to the variable List

D) Nothing

Question 31

Should you use software testing, and why?

A) No, there is no need to test

B) Yes, a lack of testing increases the likelihood of undetected problems in programs

C) Not if you have good programmers

D) Maybe, but it is expensive to do, so if you are working to a tight budget, you can pass on the testing

Question 32

Can you use a recursive function without a base case, and why?

A) No, the function will never start

B) Yes, the function will work perfectly

C) No, without a base case, the function might never end

D) Yes, the function will automatically halt when it is done

Question 33

Which of these is false about recursion?

A) Takes more memory

B) Takes less memory

C) A complex task is broken into sub-problems

D) Clean code

Question 34

Testing should cover all of your code…

A) Yes, because this guarantees no bugs

B) No, but should cover most paths through if/else statements, and at least the key methods of classes and modules

C) Yes, because this guarantees no runtime errors

D) No, as Python will create more for you based on your code

Question 35

Refactoring is not mandatory…

A) And should only be done when you finish the application

B) And is only rarely done

C) But if you don’t, then you will need to create tests

D) But if you don’t, then your code will be hard to maintain, and it will be hard to add new functionality

Question 36

Which of the following is an invalid statement?

A) a b c = 1000 2000 3000

B) a\_b\_c = 1.000.000

C) a,b,c = 1000,2000,3000

D) abc = 1,000,000

Question 37

DNS is a key part of the internet and makes it possible…

A) Yes, do no schema maps database tables to the internet protocol

B) No, domain name system is not part of the internet

C) Yes, domain name system maps IP addresses to domain names

D) No, you can use the internet without IP addresses

Question 38

unittest is the best test library in Python…

A) Yes, but it is the slowest

B) No, but it is the fastest

C) No, it is part of the standard Python library, but there are others too

D) Yes, as it provides the most extensive options for automated testing

Question 39

Why do I need to refer to self explicitly when referring to instance variables?

A) You can also refer to me if you prefer

B) Python needs to know what your input needs to be

C) Syntactically, Python needs to know whether you are referring to a local or other instance variable

D) You don’t need to use this at all

Question 40

Which of the following statements are true regarding the opening modes of a file?

[Incorrect selections score negative marks]

A) When you open a file for writing, if the file exists, the existing file is overwritten with the new file

B) When you open a file for reading, if the file does not exist, the program will open an empty file

C) When you open a file for writing, if the file does not exist, a new file is created

D) When you open a file for writing, if the file does not exist, an error occurs

E) When you open a file for reading, if the file does not exist, an error occurs

Question 41

Git is only for commercial applications, and is not useful for the work done by solo developers and students…

A) Yes, this is correct as it’s complicated and requires many people to operate

B) No, this is wrong. Git is only for small applications and students, no one in industry uses it

C) Yes, this is correct, as it’s too expensive for small-scale work

D) No, this is wrong. Everyone should use Git and push their work to a remote repository

Question 42

Dictionaries are a type of map and…

A) Are not possible in Python 3

B) Are a convenient way to store key-value pairs

C) Are slow to use

D) Are a bad option in Python to store key-value pairs

Question 43

What is substantiation in terms of Object-Oriented terminology?

A) Copying an instance of a class

B) Creating an instance of a class

C) Deleting an instance of a class

D) Modifying an instance of a class

Question 44

Patterns are regularly used in software development because…

A) The Gang of Four receive a royalty every time they are used

B) They let you cut and paste a solution into your application

C) They are applicable to every application

D) They provide a useful template, or design to develop a solution to a common challenge

Question 45

Recursion is better than looping because…

A) No, this is wrong, You should always use loops

B) Looping offloads variable maintenance to the computer

C) Loops might never end

D) No, this is wrong, Recursion is not always better than loops. It’s just an option in some cases

Question 46

When should we begin testing?

A) As late as possible by testers, with more tests added to cover code we add in

B) As soon as possible by testers, with more tests added to cover code we add in

C) As late as possible by developers, with more tests added to cover code we add in

D) As soon as possible by developers, with more tests added to cover code we add in

Question 47

Acceptance tests are…

A) Based on user stories, ideally co-written in collaboration with the client

B) Based on use cases, ideally co-written in collaboration with the client

C) A type of unit tests in Python

D) Based on user stories, ideally written by developers without the client

Question 48

UML (Unified Modeling Language) helps developers…

A) Build messaging software

B) Build software

C) Build shared understanding in conversations with others

D) Build diagrams about classes and packages

Question 49

User stories are a valuable…

A) Way to capture alternative requirements for an application before you start designing

B) Way to capture test requirements for an application before you start designing it

C) Way to capture business requirements for an application before you start designing

D) Way to capture functional requirements for an application before you start designing

Question 50

Which one of the following statements is incorrect?

A) Green – think about how to make your tests pass

B) Red – think about what you want to develop

C) Refactor – think about where to improve your existing implementation

Question 51

In Python, can a data type have two methods (or constructors) with the same name?

A) Yes, but you must have four methods

B) No, you cannot have two methods with the same name in a class

C) Yes, you can have two methods

D) No, you must have three methods

Question 52

Why is inheritance important in object-oriented programming? Choose all that apply.

[Incorrect selections score negative marks]

A) Facilitates code reuse

B) Guarantees operations run quickly

C) Allows new classes to be defined in terms of existing ones

D) Promotes information-hiding

E) Minimizes code dependencies