1. How many bits in a byte. How many kilobytes make a Gigabyte?

* There are 8 bit in 1 byte.
* 1024 \*1024 = 1048576KG

1. Add the following two binary numbers and convert the result to decimal. Show detailed steps on how you did it

100101001 + 101111011

100101001 = 256 + 0 + 0 + 32 + 0 + 8 + 0 + 0 + 1 = 297

101111011 = 256 + 0 + 64 + 32 + 16 + 8 + 0 + 2 + 1 = 379

297 + 379 = 676

1. What is the difference between compiled languages and interpreted languages? How can you classify JAVA according to this.

* Compiled Language – is a process to create an executable program for a specific platform.
* Interpreted Language – interpreted language does not require compilation before executing.

1. Write few differences between Agile and Waterfall model for Software Development Life Cycle. Give examples of projects where each type of SDLC model can be used.

* Waterfall model is simple model that requires following each step. It is time consuming and costly. This model requires following each steps and once you have moved to the next step, you cannot go back. Waterfall model is useful for those whose product has already been launched in the market but need to release a newer version of the product. Waterfall is most useful when there is a clear picture of what the final outcome of the product will look like.
* Agile model allows changes after initial planning. Waterfall model client input is not requires, comparing to the Agile model where client inputs are welcomed and it can be change if required. The editing process can take place anytime if bugs are discovered which saves a lot of time towards the end.

1. What are the key roles and responsibilities of a QA engineer in a Software organization?

* Key roles and responsibilities of a QA engineer in a software organization are:

1. Reading various requirements to understand the project
2. Developing test plan for the requirements
3. Test the program to search for failures/bugs
4. Report errors back to developers
5. Monitor processes and identify areas of efficiency improvements
6. What are the different sections contained within a test plan? Explain with examples.

* Test Case = gives you an idea of what test this is. Example: Test Case # 1
* Functionality = what you will be testing. Example a login in/out test.
* Test Case Description = requires description of the test. Example: entering correct login in information or incorrect login information
* Test Procedures = Includes each step that is required to test procedure Example: Enter user name and password
* Success/Fail Criteria = Final conclusion, whether or not you passed or failed this test. Example: Login successful or Login Failed
* Test Data = Testing with specific data sets. Example: Username: Mansi; Password: Mansi9
* Preconditions = clarifying prerequisites to test, if required. Example: Requires internet
* Actual Test Results = Login in and Logging out

1. Explain with examples the meaning of following Java concepts: Object oriented programming, Polymorphism and Inheritance

* Object oriented programming - is a method of programming based on a hierarchy of classes & objects.
  + Example:
* Polymorphism – is one of the principle of the object oriented programing. It is the quality that allows one interface to access a general class of actions.
  + Example: Fruit - within fruit you have many different types of fruits such as apples, tomatoes, cherries
* Inheritance – is another principle of the object oriented programing. It is a process by which one object can acquire the properties of another object.
  + Example -

1. Write a JAVA function to check if a number is prime or not. The function should take input the number to be tested and return true or false if number is prime or not. Test this function with TestNG test cases and upload the output as a text file.
2. Write a JAVA function to input the month number and return the month string. Test this function with TestNG test cases and upload the output as a text file.