1.

a.

When the compiler starts executing asynchronous calls from event loop then I/O or network calls will be called or executed before setImmediate and setTimeout executes before I/O and Network calls.

Execution Sequences:

1. Priority (NextTick) Queue
2. MicroTask Queue
3. Timer Queue(setTimeout)
4. I/O Queue
5. Idle
6. Network Calls
7. Check (setImmediate)
8. Close Event

b.

 Process.nextTick is a called a priority queue, this queue is fully drained after the current operation on the JavaScript stack runs to completion and before the event loop is allowed to continue where the setTimeout are being called/executed.

c.

Core Module of Node

1. HTTP :

http module includes classes, methods and events to create Node.js http server.

1. URL :

url module includes methods for URL resolution and parsing.

1. Querystring:

querystring module includes methods to deal with query string.

1. Path:

path module includes methods to deal with file paths.

1. FS:

fs module includes classes, methods, and events to work with file I/O.

1. Util:

util module includes utility functions useful for programmers.

1. V8
2. Process
3. Stream
4. OS