Assignment:-5

Practical Questions on Node.js

1. Create a simple Node.js HTTP server using http.createServer() that responds
with "Hello, World!" to any request.
```
const http = require('http');
http.createServer((req, res) => {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello, World!');
}).listen(3000);
```

2. Write a Node.js program that uses the http module to create a server and
handles query strings in the URL.
```
const http = require('http');
const url = require('url');
http.createServer((req, res) => {
  const q = url.parse(req.url, true).query;
  res.writeHead(200, {'Content-Type': 'text/html'});
  res.write(`Name: ${q.name}, Age: ${q.age}`);
  res.end();
}).listen(3000);
```

3. Create a Node.js script that reads a file using fs.readFile(), displays its
content, and handles any error.
```
const fs = require('fs');
fs.readFile('example.txt', 'utf8', (err, data) => {
  if (err) {
    console.error('Error reading file:', err);
    return;
  }
  console.log('File content:', data);
});
```

4. Write a Node.js program that uses fs.appendFile() to append content to an
existing file.
```
const fs = require('fs');
fs.appendFile('log.txt', 'New log entry\n', (err) => {
  if (err) throw err;
  console.log('Content appended!');
});
```

5. Develop a Node.js script to rename a file using the fs.rename() method and
handle errors appropriately.
```
const fs = require('fs');
fs.rename('oldname.txt', 'newname.txt', (err) => {
  if (err) {
    console.error('Rename failed:', err);
    return;
  }
  console.log('File renamed successfully.');
});
```

6. Write a Node.js program that creates a new file using fs.writeFile(), writes
some content to it, and then reads it back.
```
const fs = require('fs');
fs.writeFile('sample.txt', 'This is some content.', (err) => {
  if (err) throw err;
  fs.readFile('sample.txt', 'utf8', (err, data) => {
    if (err) throw err;
    console.log(data);
  });
});
```

7. Create a custom Node.js module that exports a function to calculate the factorial of a number, then include it in another file using require().

```
// factorial.js
exports.factorial = function(n) {
  if (n === 0 || n === 1) return 1;
  return n * exports.factorial(n - 1);
};
```

```
// app.js
const fact = require('./factorial');
console.log('Factorial of 5:', fact.factorial(5));
```