BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – BCA-Hons-2023
Course Name – Full-Stack Development-I
Course Code - BCA47113 (T)
(Semester IV)

Full Marks : 40   **Time : 2:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 10=10

1.   *Choose the correct alternative from the following :*

(i)   Identify the JavaScript engine on which Node.js is built.

a) JavaScriptCore   b) Chakra
c) SpiderMonkey   d) V8

(ii)   Identify the primary feature of Node.js.

a) Single-threaded, blocking I/O   b) Multi-threaded, blocking I/O
c) Blocking I/O   d) Single-threaded, non-blocking I/O

(iii)   Identify the platform on which Node.js allows JavaScript to run.

a) Browser   b) Server
c) Desktop   d) Mobile

(iv)   Identify why Node.js is more efficient than traditional models in handling concurrent connections.

a) Multi-threaded execution   b) Non-blocking event loop
c) Parallel computation   d) High memory usage

(v)   Indicate the first step in installing Node.js on Windows.

a) Download the installer from nodejs.org   b) Open Command Prompt
c) Install Visual Studio Code   d) Install Git

(vi)   Identify the default environment for executing JavaScript code interactively in Node.js.

a) Restart the system and check for updates   b) Check the package.json file in the project directory

c) Open the browser and visit localhost:3000   d) Run node -v in the terminal

(vii)   Choose the correct way to export multiple functions from a local module in Node.js.

a) module.exports = { func1, func2 };   b) exports = { func1, func2 };
c) exports.func1 = func1; exports.func2 = func2;   d) All of the these

(viii)   Choose the correct statement that describes the value of package-lock.json in npm.

a) It locks the installed versions of dependencies.

b) It specifies the version of Node.js to be used.

c) It lists the scripts for running the project.

d) It stores all the npm commands used in the project.

(ix) Choose the correct option for viewing installed packages in a project.

a) npm show

b) npm view

c) npm list

d) npm show list

(x) Choose the correct steps to take when the require() function fails to load a module.

a) Check if the module exists in node_modules.

b) Ensure that the module is installed globally.

c) Make sure the module's name is typed correctly.

d) All of the these.

Group-B
(Short Answer Type Questions)

3 x 5=15

2. Describe how efficiently debug a Node.js application. (3)
3. Distinguish between core modules and local modules in Node.js and give examples. (3)
4. Implement a method to write content to a new file using the fs module in Node.js. (3)
5. Demonstrate how to handle different HTTP request methods (GET and POST) in a Node.js server. (3)
6. Analyze the concept of EventEmitter in Node.js. (3)

OR

Categorize the different types of middleware functions in Express.js. (3)

Group-C
(Long Answer Type Questions)

5 x 3=15

7. Define Node.js and describe how it differs from traditional web servers. (5)
8. Summarize the functionality of the Node.js OS module and demonstrate it's usage with examples. (5)
9. Illustrate how to serve an external HTML file using the HTTP module. (5)

OR

Examine the techniques used to handle different routes (URLs) in an HTTP server. (5)

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