



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – BCA-Hons-2023/BCA-Hons-2024

Course Name – Full-Stack Development-I/Full-stack Development-I

Course Code - BCA47113 (T)/BCA47111 (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 package manager for Node.js
 - a) NPM
 - b) YARN
 - c) PIP
 - d) Composer
- (ii) Identify the platform where Node.js has a large library of pre-built packages available.
 - a) GitHub
 - b) NPM
 - c) Python Package Index
 - d) Maven
- (iii) Identify the folder that typically holds Node.js modules in a project
 - a) node_modules
 - b) src
 - c) assets
 - d) bin
- (iv) Identify the difference between dependencies and devDependencies, and indicate which one is used for production
 - a) None
 - b) devDependencies
 - c) Both
 - d) dependencies
- (v) Identify the correct option in the context of npm
 - a) A tool for managing Node.js modules and dependencies
 - b) A framework for building web applications in Node.js
 - c) A library for handling HTTP requests
 - d) A module for handling file system operations
- (vi) Select the correct sequence of methods to set up a basic server in Node.js
 - a) createServer(), listen(), request()
 - b) ccreateServer(), listen(), request()
 - c) createServer(), request(), listen()
 - d) request(), createServer(), listen()
- (vii) Identify the function of the path.parse() method in the path module
 - a) To normalize the path
 - b) To resolve a relative path to an absolute one
 - c) To split a path string into its components (root, dir, base, ext, name)
 - d) To concatenate multiple paths

- (viii) Choose the appropriate method to register an event listener that will only run once in Node.js
- a) event.on('eventName', callback) b) event.once('eventName', callback)
 c) event.emit('eventName', callback) d) event.handle('eventName', callback)
- (ix) Choose the correct method to apply middleware to a specific route in Express.js
- a) app.use('/route', middlewareFunction) b) app.get('/route', middlewareFunction, handlerFunction)
 c) app.route('/route', middlewareFunction, handlerFunction) d) app.middleware('/route', middlewareFunction)
- (x) Select the key feature of MongoDB.
- a) Tables and rows b) Flexible schema design
 c) Fixed schema d) Data stored in XML format

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Analyze and break down the key components of Node.js Event-Driven Architecture. (3)
3. Explain and demonstrate the CRUD operations in MongoDB. (3)
4. Outline the process of handling errors in the REPL and describe why error handling is critical in Node.js. (3)
5. How does Node.js handle file system operations asynchronously? (3)
6. Formulate the process of updating records in MongoDB with Node.js. (3)

OR

Describe what a MongoDB connection string is and assess how configurations are managed. (3)

Group-C

(Long Answer Type Questions)

5 x 3=15

7. Analyze the role of Node.js core modules such as fs, http, and path in server-side development, and describe their functionality in detail. (5)
8. Explain the role of middleware in an Express.js application and illustrate how it can be used to handle authentication. (5)
9. Analyze the concept of middleware in Express, evaluate the different types available, and explain the process of configuring routes in Express.js. (5)

OR

Summarize the role of the express.Router() function in Express and how it helps in organizing and modularizing routing in web applications. (5)

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