

Bharati Vidyapeeth's
Institute of Computer Applications and Management (BVICAM)
 A-4, Paschim Vihar, New Delhi-63
 SECOND SEMESTER [MCA] Internal Examination, May 2023

Paper Code: MCA-114

Subject: Full Stack Development

Time: 2 Hours

Maximum Marks: 45

Note: Attempt THREE questions in all. Question No. 1 is compulsory and attempt one question from each unit.

1. Answer all the following questions briefly: - 1.5 × 10 = 15
- (a) Suppose, you are the backend developer for an application. You need to suggest the either NodeJS or ExpressJS to develop the backend code. Which one will be best suited to the backend? Justify your answer. CO4
- (b) List out at-least 5 major changes, which are optimized either the writing, understandability or performance of the code or code of execution, are not included in ES5 but include in ES6. CO1
- (c) Illustrate the transpiling with a suitable example. CO1
- (d) You are required to develop a module in ES6 to return the sum of any two given numbers. Write the code to develop module in ES6. CO1
- (e) Assume, you are required to develop a code to get the data from the external site and display the responded data into console of the browser. [NOTE: assume the id of button is 'getData', you may write the code in either pure JS or JQuery] CO1
- (f) Write and compare the code for a server in NodeJS and ExpressJS. CO4
- (g) Explain the output of the following code: CO1
- ```
console.log("first");
setTimeout(() => {
 console.log("second");
}, 0);
console.log("third");
```
- (h) Describe the role of Package.JSON in NodeJS. CO4
- (i) Distinguish between the Javascript Object and a JSON. CO4
- (j) Differentiate between validation and verification. CO1

## SECTION - I

- ✓ 2. (a) Suppose, XYZ Bank Ltd. is one of the precious clients for your organization. You are appointed as Project Manager for the XYZ Bank Ltd. application. The Bank has reported the existing application's performance is not up to the standard. The Head of IT department wants your opinion about the NodeJS, ReactJS for the banking app. Also, you need to suggest that the DB, which would be better to develop the application i.e. SQL based DB or No-SQL based DB. Justify your suggestions. 5 CO2

- (b) You have been asked to develop a react component using the pure React code. 5 CO2  
The output must be in form of a table (No DB is required). The table must have the following details:  
S.No., Name, Enrollment Number, Programme, Semester
- (c) Differentiate between the DOM and Virtual DOM 5 CO2
3. (a) Differentiate between the shadow DOM and virtual DOM. 5 CO2
- (b) You have been asked to develop a react component using the JSX. The component has the following functionalities: 5 CO1
1. On click of any part of page, a message displayed "Body Clicked".
  2. On every key strokes in textbox it displays the same content of text box to the label.

Develop the react component.

- (c) Suppose, ABC Pvt. Ltd. is a consumer-based service company. The company has an application to deal with customer requirements. The users of the application have complaints regarding the performance. The users have reported that the application is not able to transfer data from one screen to another. It is a big challenge for the customers to fill the requirements in one go. They have to fill the same information repeatedly on multiple screens. For example, A customer says "I have filled my name and mobile number in the application. It asked me to verify the phone number through OTP. But, when I fill the OTP, the name and mobile number is not appearing on the application page. I had to fill the same details again." You need to suggest all the possible solutions to overcome this problem. 5 CO2

#### SECTION - II

- ✓ 4. (a) Develop a module to handle the get, post, put, patch methods from the clients. For every type of request the module responds to the client the name of the method in following format: 5 CO4  
{method: Name of Method}
- (b) Discuss the benefits of NodeJS over any web development language model. 5 CO4
- (c) Appraise the benefits of NPM in local and global. 5 CO4
- ✓ 5. (a) Discuss the structure of package.json with respect to NodeJS. 5 CO4
- (b) Develop a module to create the DB using ORM in sequelize and connect the same to MySQL DB. Any change in models in backend app led to change in corresponding DB. 5 CO4
- (c) Explain the module's imports and exports in NodeJS with suitable example. 5 CO4