

- (d) C++
- 1-d. In order to use Mongo with Express, we need a client API for node.(CO2) 1
- (a) TRUE
 - (b) FALSE
 - (c) Can be true or false
 - (d) None
- 1-e. Select command to compile a module. (CO3) 1
- (a) tsc-m amd mymodule.ts
 - (b) tsc--module amd mymodule.ts
 - (c) Both a and b
 - (d) None ofthe above
- 1-f. Rest parameter used in a function.....(CO3) 1
- (a) the type of parameter is not known
 - (b) the function is called recursively
 - (c) the function needs to be executed asynchronously
 - (d) the number of parameters is not known
- 1-g. AngularJs is based on.(CO4) 1
- (a) MVC Architecture
 - (b) MVVM Architectural pattern
 - (c) Decorator pattern
 - (d) Observer Pattern
- 1-h. The controller take the single parameter.(CO4) 1
- (a) \$controller
 - (b) ^scope
 - (c) \$scpoe
 - (d) None of these
- 1-i. Primary unit of data modeling in MongoDB (CO5) 1
- (a) Tables
 - (b) Row
 - (c) Documents
 - (d) None of the above
- 1-j. Categories of NoSQL databases is.....(CO5) 1
- (a) 1

(b) 2

(c) 4

(d) 3

2. Attempt all parts:-

- | | | |
|------|--|---|
| 2.a. | Illustrate Graph QL.(CO1) | 2 |
| 2.b. | Relate the term Express.js Routing.(CO2) | 2 |
| 2.c. | Define power of types in your words.(CO3) | 2 |
| 2.d. | Define model view in MVC.(CO4) | 2 |
| 2.e. | Explain various types of SQL databases.(CO5) | 2 |

SECTION B

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3. Answer any five of the following:-

- | | | |
|------|---|---|
| 3-a. | List the differences between the global installation of dependencies and local installation of dependencies.(CO1) | 6 |
| 3-b. | Explain the difference between events and callbacks in Node.js.(CO1) | 6 |
| 3-c. | Describe Environmental Variable and its types. (CO2) | 6 |
| 3-d. | Write down the advantages of Express.js.(CO2) | 6 |
| 3.e. | Explain Decorators in TypeScript.(CO3) | 6 |
| 3.f. | Explain architectures of angular js with diagram.(CO4) | 6 |
| 3.g. | Write down the all features sets of mongoDB in details.(CO5) | 6 |

SECTION C

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4. Answer any one of the following:-

- | | | |
|------|---|----|
| 4-a. | Why is Node.js preferred over other backend technologies like Java and PHP. (CO1) | 10 |
| 4-b. | Explain the concept of middleware in Node.js.(CO1) | 10 |

5. Answer any one of the following:-

- | | | |
|------|---|----|
| 5-a. | Explain REST full API's in detail with suitable diagram.(CO2) | 10 |
| 5-b. | Mention and describe HTTP Method of Express.(CO2) | 10 |

6. Answer any one of the following:-

- | | | |
|------|---|----|
| 6-a. | TypeScript is a free and open-source programming language, justify this statement in your words.(CO3) | 10 |
| 6-b. | List some features of Typescript and explain each in brief.(CO3) | 10 |

7. Answer any one of the following:-

- 7-a. Explain Angular js AJAX . What are two different APIs to handle Ajax requests explain with example.(CO4) 10
- 7-b. Discuss AngularJS Forms & Forms validation with example.(CO4) 10
- 8. Answer any one of the following:-**
- 8-a. Write steps for MongoDB Environment Setup and how to Install MongoDB on Windows.(CO5) 10
- 8-b. Comparison between a model and a schema in Mongoose.(CO5) 10

REG. MAY 2024