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Subject Code:- AMICSE0614

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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech (Integrated)

SEM: VI - THEORY EXAMINATION- (20.... - 20....)

Subject: Web Development using MEAN Stack

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

- 1-a. Select the command that is used to install the Node.js express module.(CO1, K2) 1
- (a) \$ npm install express
- (b) \$ node install express
- (c) \$ install express
- (d) None of the above
- 1-b. The fs module stand for.(CO1, K1) 1
- (a) File Service
- (b) File System
- (c) File Store
- (d) File Sharing
- 1-c. app.listen(port, [host], [backlog], [callback])) performs(CO2, K2) 1
- (a) This method specifies what to execute when a get request at the specified route is made
- (b) This function binds and waits for connections on the provided host and port
- (c) This method accepts an object as input and returns it to the requesting client
- (d) This method send request to the browser.
- 1-d. Express provides a unique method ____ that handles all forms of HTTP methods 1
- at a specific route using the same function.(CO2, K3)
- (a) Whole

- (b) App
(c) All
(d) Get
- 1-e. TypeScript supports how many types of comments.(CO3, K2) 1
(a) 1
(b) 2
(c) 3
(d) 4
- 1-f. Identify the year when TypeScript was first publicly released.(CO3, K1) 1
(a) 2009
(b) 2012
(c) 2015
(d) 2018
- 1-g. The controller take the single parameter.(CO4, K2) 1
(a) \$controller
(b) ^scope
(c) \$scope
(d) None of these
- 1-h. The following community Angular JS belong to.(CO4, K2) 1
(a) Twitter
(b) Facebook
(c) Google
(d) Microsoft
- 1-i. Data modeling is -----(CO5, K1) 1
(a) The process of organizing data in a way that facilitates efficient storage and retrieval
(b) The process of creating user interfaces for data entry and retrieval
(c) The process of optimizing database queries
(d) All of the above
- 1-j. Reference in MongoDB data modeling is _____ (CO5, K2) 1
(a) A way to create a foreign key relationship between two documents
(b) A way to group related data together in a single document
(c) A way to add additional metadata to a document
(d) None of the above
2. Attempt all parts:-
- 2.a. Examine Promise chaining in Node.js.(CO1, K2) 2
- 2.b. List the widely used Http Methods in Express.js.(CO2, K1) 2
- 2.c. Illustrate what are the benefits of typescript.(CO3, K3) 2

- | | | |
|------|---|---|
| 2.d. | Explain what is interpolation in Angular.(CO4, K2) | 2 |
| 2.e. | Explain NoSQL land scape and state some common types of NoSQL databases.
(CO5, K2) | 2 |

SECTION-B

30

3. Answer any five of the following:-

- | | | |
|------|--|---|
| 3-a. | Explain Callback function and Asynchronous Programming in Node.js.(CO1, K2) | 6 |
| 3-b. | Discuss the difference between Single Threaded and Multi Threaded
Architecture.(CO1, K2) | 6 |
| 3-c. | Describe the steps to activate debugging features within an Express.js
application.(CO2, K2) | 6 |
| 3-d. | Specify the commands required to install the body-parser and cookie-parser
modules in a Node.js environment.(CO2, K2) | 6 |
| 3.e. | Explain the concept of type assertions in TypeScript and provide a definition for
rest parameters.(CO3, K2) | 6 |
| 3.f. | Describe the operational flow of the MVC architecture in application
development.(CO4, K2) | 6 |
| 3.g. | Explain all steps to insert documents into a MongoDB collection.(CO5, K2) | 6 |

SECTION-C

50

4. Answer any one of the following:-

- | | | |
|------|---|----|
| 4-a. | Explain REST Architecture. Mention at least 5 HTTP Methods used in REST
based Architecture.(CO1, K2) | 10 |
| 4-b. | Explain NPM , Node.js module and types of Node Modules. Also show their
implementation. (CO1, K3) | 10 |

5. Answer any one of the following:-

- | | | |
|------|--|----|
| 5-a. | Describe Middleware and its types in Express.js with code.(CO2, K2) | 10 |
| 5-b. | Explain Routing in Express.js. with all the steps and implementation code.(CO2,
K2) | 10 |

6. Answer any one of the following:-

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|------|--|----|
| 6-a. | Explain the concept of function overloading provided by TypeScript with the help
of example.(CO3, K2) | 10 |
| 6-b. | What are the public ,private and protected modifiers states this programming
concept with example.(CO3, K2) | 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, K2) | 10 |
| 7-b. | Explain Angular.js filter. Show the use of Angular.js with the help of
example.(CO4, K2) | 10 |

8. Answer any one of the following:-

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|------|--|----|
| 8-a. | Describe tools and techniques that use to monitor and troubleshoot an Angular- | 10 |
|------|--|----|

MongoDB API connection, and how can you ensure that the system is reliable and scalable.(CO5, K2)

- 8-b. Explain the concept of CRUD Operation in MongoDB, show with the help of implementation code.(CO5, K3) 10

REG:JAN_JUN-2025