

B.E./B.TECH. Degree Examination, December 2020

Semester - VI

CS16016 – USER INTERFACE TECHNOLOGIES

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Which of the following is not a NoSQL database?
 - a) SQL Server
 - b) MongoDB
 - c) Cassandra
 - d) None of the mentioned
2. In Nodejs, how node based web servers differ from traditional web servers?
 - a) Node based server uses a single threaded model and can serve much larger number of requests compared to any traditional server like Apache HTTP Server.
 - b) Node based server process request much faster than traditional server.
 - c) There is no much difference between the two.
 - d) All of the Above
3. Which of the following function definition is correct in typescript?
 - a) `number function abc(string a){return 12;}`
 - b) `function abc(string a,number b){return 12;}`
 - c) both a and b
 - d) none of the above
4. Which file is responsible for startup of angular-2 project?
 - a) main.ts
 - b) index.ts
 - c) app.ts
 - d) angular.cli.json
5. Differentiate basic commands used in the MongoDB Shell with its syntax and functions.
6. Is it possible to create the Javascript file equivalent for an Interface of Typescript? Justify with an example.
7. Compare the Single Page Application in Angular with traditional web application.
8. Comment on the differences between AngularJS and Node.js?

PART B - (4 X16 = 64 marks)

9. (a) Create a collection BOOK in the database LIBRARY.
Insert about 5 documents in the collection BOOK; each document should have BOOK-NAME, AUTHOR_NAME as mandatory fields, PUBLISHER-NAME, EDITION, NO-OF-PAGES as optional fields using Bulk operation. Then execute the following MongoDB commands,
- i. Display all the documents (16)
 - ii. Display the documents with only BOOK-NAME and AUTHOR-NAME
 - iii. Update the documents which has NO-OF PAGES, with new field TABLE-OF- CONTENTS with 5 indices value and display only the updated documents Count and Sort the documents with respect to AUTHOR-NAME.

(OR)

- (b) Explain in detail about replication and sharding of data in MongoDB and how they differ from its way of operation. (16)
10. (a) Discuss in detail about features of Node JS and the operation of event loop in Nodejs with a suitable example. (16)

(OR)

- (b) (i) Explain briefly about the event handling of GET and POST methods implementation in NodeJS with an example. (8)
- (ii) Differentiate various types of API functions in Node.js and discuss about its area of application. (8)
11. (a) Explain in detail about Typescript Functions and classify its parameters with its syntax and simple code. (16)

(OR)

- (b) What are classes in Typescript, how it is different from Interface, how do you implement inheritance in Typescript? Explain the types of inheritance supported in Typescript with suitable example. (16)
12. (a) Describe the work of change detection in components of Angular 4.0 and the Component Lifecycle in Angular 4.0. (16)

(OR)

- (b) Discuss in detail about the implementation of Forms and how routing is performed in Angular 4.0 (16)