

Question Paper Code : 21270

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Information Technology

IT 3501 — FULL STACK WEB DEVELOPMENT

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What is a web development framework?
2. What is Express in full stack?
3. List the primitive types in Node.JS.
4. What are callbacks in Node.JS?
5. Why MongoDB is called schema less database?
6. What is database collection and document in MongoDB?
7. Differentiate between React and Angular.
8. What is data binding in Angular and what is the use of data binding in Angular?
9. List the three different packages in React for routing.
10. What is a MERN Stack?

PART B — (5 × 13 = 65 marks)

11. (a) What is MVC Architecture? Explain the components of MVC and how data flow takes place in MVC Architecture with suitable example.

Or

- (b) Describe the major functions of web browser, web server and outline the working of web server.
12. (a) Explain the components of Node.JS application. Develop a simple Web application to get user profile and display it.

Or

- (b) Explain event-driven, blocking and non-blocking I/O model in Node JS.
13. (a) Design a signup form using Node.js and MongoDB. The form should capture name, email, password and mobile number from the user and the captured information are stored in a MongoDB.

Or

- (b) Illustrate the following operation with suitable example.
- (i) Create MongoDB database.
 - (ii) Create collection.
 - (iii) Insert documents into a MongoDB database.
 - (iv) Find and select data from a MongoDB collection.
 - (v) Update document.
14. (a) What is Express.JS routing? Explain how to setup Express routes with suitable example.

Or

- (b) What is Typescript and what are the features of Typescript? Develop Typescript code to validate email address and password.
15. (a) Explain the different phases of ReactJS component lifecycle. Also illustrate how to change the state of the component on click.

Or

- (b) Develop Rest API to perform CRUD operations for customer entity with attributes of your choice.

PART C — (1 × 15 = 15 marks)

16. (a) A technical institute in Tamil Nadu offering six different under-graduate programmes in engineering. The institute admit the students to these programmes based on the average marks obtained in the HSC. Students seeking admission can submit only one application form and he/she can give maximum three programmes choices according to their choice of preferences in the application form. Develop a web based online application form to capture the required student details including programme preferences and store them in a database. On successful submission of application form, the student will be informed a confirmation message through email and SMS to registered mobile number.

Or

- (b) Assume that a well-known private hospital in Tamil Nadu is running a blood bank for their patients. Any donor who is interest to donate the blood can register with the hospital for donating blood. The hospital is interested to introduce the online registration system. Develop a web based donor registration system to capture information about the donor such as name, mobile number, email, address, blood group, age, gender and store them in a database. On successful submission of registration form, the donor will be informed a confirmation message through email and SMS to registered mobile number.