Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – April / May – 2022**

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| **Code :** | **20CS2056** | **Duration :** | **3hrs** |
| **Sub.Name:** | **WEB TECHNOLOGY** | **Max. Marks:** | **100** |

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| **Q. No.** | **Questions** | | **Course Outcome/ Pattern** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)** | | | | |
| 1. | Enumerate the various form elements. | | CO1/R | 1 |
| 2. | Define event handlers. | | CO2/U | 1 |
| 3. | Infer the term AngularJS directives. | | CO5/U | 1 |
| 4. | List any two advantages of Node.js. | | CO4/R | 1 |
| 5. | Name the module used to upload files in node.js and write its syntax. | | CO3/R | 1 |
| 6. | Mention the purpose of Inline CSS. | | CO1/R | 1 |
| 7. | Write the syntax to access object in JavaScript. | | CO6/C | 1 |
| 8. | Identify the purpose of JSON. | | CO6/R | 1 |
| 9. | State the syntax rules for JSON. | | CO6/R | 1 |
| 10. | Mention the purpose of AngularJS ng-model Directive. | | CO5/U | 1 |
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| **PART – B (6 X 3 = 18 MARKS)** | | | | |
| 11. | | Explain the attributes of table tag with an example. | CO1/U | 3 |
| 12. | | Demonstrate the two-way data binding using suitable snippet. | CO5/A | 3 |
| 13. | | List any two mouse events with its syntax in JavaScript with examples. | CO2/R | 3 |
| 14. | | Create a “new file” using Node.js file system and append content “hello” in it. | CO4/C | 3 |
| 15. | | Discuss mongo dB sort operation with example. | CO3/U | 3 |
| 16. | | Describe about JSON Schema. | CO6/U | 3 |
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| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is Compulsory)** | | | | |

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| 17. |  | Design a website using HTML form elements and media elements with the following fields:  i) create a form for feedback using form elements.  ii) use media element in the above form.  iii) use the text boxes to enter the user names and password.  iv) insert radio buttons to provide ranking level.  v) use checkboxes to give suggestions to improve the session.  vi) create textbox to enter comments.  vii) use buttons to submit the form and reset to clear values entered. | CO1/C | 12 |
|  |  |  |  |  |
| 18. |  | Apply timer functions and object and create different buttons to display:  i) Date and time. ii) Current date not time.  iii) Current time and not date.  iv) The message “Your form has been submitted” should appear after 5 seconds.  v) Stop the execution of the above program before the message gets displayed.  vi) Time where the seconds should get changed for every 2 seconds (like a digital clock). | CO3/A | 12 |

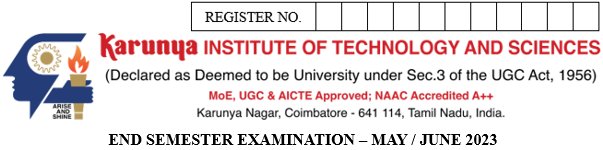
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| 19. |  | Demonstrate the following JSON components with example.  i)data types ii) parse iii) stringfy iv) objects v) arrays | CO6/A | 12 |
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| 20. |  | Design a webpage for a university with the following specifications:  i) display the faculty and student details in a table by including all the table tag properties.  ii) use header, footer and navigation sections to display necessary details such as contact, institution, admission, infrastructure details etc.  iii) use external and internal links.  iv) display a background image using <img> and part the content in the body using <div>  v) use ordered list and unordered list to display important facility provided by them. | CO1/C | 12 |
|  |  |  |  |  |
| 21. |  | Explain in detail about different classes of buttons, text colors and background colors used in bootstrap with example. | CO1/U | 12 |
|  |  |  |  |  |
| 22. |  | Explain the file system modules of Node.js with suitable examples. | CO2/U | 12 |
|  |  |  |  |  |
| 23. |  | Implement the validation strategy by designing the following scenario for AngularJS form with the fields first name, last name, password, radio button, checkbox, and submit button. Implement form validation for all the above fields. All the above fields should throw error if any of the field is left unfilled. For first name and last name set default minimum and maximum length. If the condition is not satisfied it should throw an error message. If none of the above conditions are satisfied submit button should be disabled. | CO5/A | 12 |
|  |  | **Compulsory**: | | |
| 24. |  | Create a student database using mongo dB with the fields:  (Name, Degree, CGPA). Also perform the below operations  i) insert 5 documents.  ii) display all the documents.  iii) find the first document in the customers collection.  iv) exclude "name" from the result.  v) display only the degree.  vi) update one document from the existing collection. | CO4/C | 12 |

**Graphical user interface, application

Description automatically generated with medium confidence**

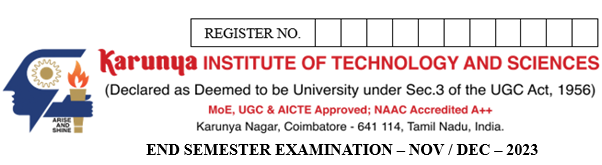
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| **Course Code** | **20CS2056** | **Duration** | **3hrs** |
| **Course Name** | **WEB TECHNOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | | **Course Outcome** | **Bloom’s Level** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)** | | | | | | |
| 1. | Identify the HTML attribute to merge two columns in a HTML table. | | | CO1 | R | 1 |
| 2. | State the CSS property to adjust the space between the content and border of the HTML element. | | | CO1 | R | 1 |
| 3. | Express the Javascript code to display the “Hello World” inside the following HTML DIV element.  <div id= “box”></div> | | | CO2 | U | 1 |
| 4. | Recall the JQuery method that is used to find the immediate ancestor in the HTML DOM tree. | | | CO2 | R | 1 |
| 5. | Indicate the bootstrap code to display the image as a thumbnail. | | | CO6 | U | 1 |
| 6. | Define a JSON string to store a person name | | | CO3 | R | 1 |
| 7. | State the purpose of ng-model directive in angular js. | | | CO4 | R | 1 |
| 8. | Describe the angular js code to bind the value of num inside the following DIV view.  <div ng-init=‘num=10’></div> | | | CO4 | U | 1 |
| 9. | Tell the nodejs module name to access files. | | | CO5 | R | 1 |
| 10. | Give the nodejs statement to set the HTTP header as text/html. | | | CO6 | U | 1 |
| **PART – B (6 X 3 = 18 MARKS)** | | | | | | |
| 11. | Implement CSS code to change the background and text color of a DIV element while the user keeps the mouse over it. | | | CO1 | A | 3 |
| 12. | Illustrate the JQuery code to add one more fruit name “Pineapple” in the following ordered list with proper HTML code.  1. Apple 2. Orange 3. Mango | | | CO2 | U | 3 |
| 13. | List the various data types supported by JSON. | | | CO3 | R | 3 |
| 14. | Demonstrate an alert message using angular js controller function when button is clicked. | | | CO6 | U | 3 |
| 15. | Illustrate http module in node js to display response as “Hello World” from server. | | | CO5 | U | 3 |
| 16. | Demonstrate insertMany() method in MongoDB Shell. | | | CO4 | U | 3 |
| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.No 17 to 23, Q.No 24 is Compulsory)** | | | | | | |
| 17. | | a. | Develop the HTML web page to display the following user registration with all fields as mandatory. | CO1 | A | 6 |
|  | | b. | Discuss the following CSS positioning with suitable programs each.  I) relative ii) absolute iii) fixed iv) sticky | CO1 | U | 6 |
|  | |  |  |  |  |  |
| 18. | | a. | Develop a HTML program with JavaScript code to perform the Electricity Bill (EB) calculation as given below   * Get user details including name, previous unit and current unit through input fields. * Calculate the consumed units and perform EB calculation with following constraints   0-100 units = Free  101-400 units = Rs. 4.50 per unit  401- 500 units = Rs. 6 per unit  501 and above units= Rs. 8 per unit   * Display the customer name, total units consumed and bill amount using the DIV element. | CO2 | A | 6 |
|  | | b. | Design a HTML page as per the following and read the value of text boxes A and B using JQuery and display the sum of A and B in the Result textbox when the user clicks the “Addition” button. | CO2 | A | 6 |
|  | |  |  |  |  |  |
| 19. | | a. | Prepare a JSON to represent the following Bank Accounts details and convert JSON string to Javascript Object and access individual values and display the account details having balance greater than Rs.10000 on a web page. | CO3 | U | 6 |
|  | | b. | Construct JSON Schema for the given JSON data | CO3 | A | 6 |
|  | |  |  |  |  |  |
| 20. | | a. | Develop a HTML page with Angular JS to calculate the Monthly EMI, Total Repayment, and Total Interest for the given input when the Find EMI button is clicked.  Formula Reference:  E = p x r x (1 + r )^n / ( ( 1 + r )^n - 1 ) where E is EMI, p is principal loan amount, r is monthly rate of interest, n is number of months. | CO5 | A | 6 |
|  | | b. | Demonstrate the following with suitable HTML with Angular JS program illustrations.   * Form Validation for type=email, required and show error * Angular JS routing with two hyperlinks | CO5 | U | 6 |
|  | |  |  |  |  |  |
| 21. | |  | Demonstrate nodejs application by creating a HTML form to collect the details such as Name, Regno, Year of study, Dept, College in the home page and display those details in next page when the form is submitted. | CO4 | A | 12 |
|  | |  |  |  |  |  |
| 22. | | a. | Explain the following in HTML page design with suitable example programs.  i) Ordered list ii) Unorder list iii) Internal Hyperlink  iv) External Hyperlink | CO6 | U | 6 |
|  | | b. | Discuss the document object model methods used to access the HTML elements in Javascript. | CO3 | U | 6 |
|  | |  |  |  |  |  |
| 23. | | a. | Explain the following special effects in JQuery with proper HTML and JQuery code.  i) fading ii) sliding iii) animation | CO6 | U | 6 |
|  | | b. | Demonstrate any four angularjs filters with proper HTML and Angularjs programs. | CO5 | A | 6 |
| **COMPULSORY QUESTION** | | | | | | |
| 24. | |  | Demonstrate the following mongodb operations to manage the employee information such as name, empid, gender, email, phone, salary.  a) Create database ‘Infosys’  b) Create collection ‘Teams’  c) Insert the above mentioned employee information for 5 employees.  d) Search a particular employee data using empid.  e) Change the salary of a particular employee  f) Delete the particular employee data | CO4 | A | 12 |



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| **Course Name** | **WEB TECHNOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)**  **(Answer all the questions)** | | | | | |
| 1. | Define the use of DOCTYPE in HTML web pages. | | CO1 | R | 1 |
| 2. | State the HTML element to display a photo in 200 X 200 dimensions. | | CO1 | R | 1 |
| 3. | Define the HTML code to display the following text.  The Product MRP is Rs.10000, **Offer Price** is ~~Rs.10000~~ Rs.5999 | | CO2 | R | 1 |
| 4. | State the CSS Selector that selects the HTML element by the **#** symbol. | | CO2 | R | 1 |
| 5. | State the jQuery effect action to switch between fade-in and fade-out. | | CO1 | R | 1 |
| 6. | Identify the method used to call a JavaScript function every specified millisecond. | | CO1 | R | 1 |
| 7. | Identify the angular JS validation state to display the error message for the <input type=email> | | CO4 | U | 1 |
| 8. | State the angular JS filter to display the cost of a product in dollar format. | | CO4 | U | 1 |
| 9. | Name the module used to read HTML file content in Node JS program. | | CO3 | R | 1 |
| 10. | Label the MongoDB command used to create a new collection in MongoDB database. | | CO3 | R | 1 |
| **PART – B (6 X 3 = 18 MARKS)**  **(Answer all the questions)** | | | | | |
| 11. | Describe the HTML code to display the following content on a web page.   1. Morning    * Discussion 2. Afternoon    * Drawing 3. Evening    * Demo | | CO1 | U | 3 |
| 12. | Write an HTML program with JavaScript code to display a popup message box when the page loads. | | CO2 | U | 3 |
| 13. | Describe the JSON datatypes with suitable examples. | | CO6 | U | 3 |
| 14. | Display the array elements in HTML list format using AngularJS ng-repeat. | | CO6 | U | 3 |
| 15. | Illustrate the jQuery code for sliding upwards and downwards effects with proper HTML code. | | CO3 | A | 3 |
| 16. | Give example of an event emitter in NodeJS. | | CO4 | U | 3 |
| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q. No. 17 to 23, Q. No. 24 is Compulsory)** | | | | | |
| 17. | a. | Demonstrate an online registration form using HTML as given below with the necessary attributes to make all fields mandatory. | CO6 | A | 6 |
|  | b. | Explain the CSS box model with a neat sketch and a suitable example program | CO6 | R | 6 |
|  |  |  |  |  |  |
| 18. | a. | Implement an HTML web page with appropriate JavaScript as per the following design and read the value of A and B, then display the sum of A and B in the result text box when the user clicks the “Addition” button. | CO3 | A | 6 |
|  | b. | Describe any five JavaScript document object model methods with example programs. | CO2 | R | 6 |
|  |  |  |  |  |  |
| 19. | a. | Prepare a JSON object to store the following details and convert as a JavaScript object and display all the data in HTML table format.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **EM** | **CODE** | **SUBJECT** | **GRADE** | **CREDIT** | | 5 | 20CS2037 | Optimization Methodologies | A+ | 3 | | 5 | 20CS2045 | RFID Technologies | A+ | 3 | | 5 | 20CS2054 | Theory of Computation | A+ | 3 | | 5 | 20CS2016 | Database Management Systems | A+ | 4.5 | | 5 | 20CS2031 | Introduction to Data Science | A+ | 4.5 | | 5 | 20CS2056 | Web Technology | A+ | 4.5 | | CO5 | U | 6 |
|  | b. | Explain the various traversing methods in jQuery with suitable example programs | CO2 | R | 6 |
|  |  |  |  |  |  |
| 20. | a. | Explain the following list in HTML with suitable example programs   * Ordered List * Unordered List * Definition List | CO1 | R | 6 |
|  | b. | Develop a webpage using HTML, Angular JS Routing for your personal website as per your choice with the following pages  a. Main HTML program with Angular JS routing  b. Hyper Links   * Personal Details * Academic Details * Project / Internship Details | CO5 | A | 6 |
|  |  |  |  |  |  |
| 21. | a. | Sketch the following content using HTML | CO1 | U | 6 |
|  | b. | Discuss the following CSS positioning with suitable programs each.  relative b) absolute c) fixed d) sticky | CO5 | A | 6 |
|  |  |  |  |  |  |
| 22. | a. | Illustrate the form validation with proper error messages for the following validators using Angular JS.   * type=email * required | CO3 | A | 4 |
|  | b. | Create a web application to develop the following Budget Calculator using Angular JS. Here, get the room rent, accessories, emergency and saving in percentage (%), then divide the given amount based on the percentage and display each value in the place provided when the “Evaluate My Money” button. | CO1 | A | 8 |
|  |  |  |  |  |  |
| 23. | a. | Prepare JSON data to represent the following Bank Account details. | CO2 | U | 4 |
|  | b. | Create an HTML program with jQuery actions to calculate and display the BMI value and Status for the given weight and height.  BMI = weight(kg)/[height(m)]2  Check the status using the following conditions.  • Underweight: BMI < 18  • Normal: BMI between 18 – 25  • Overweight: BMI between 25 – 30  • Obese: BM > 30 | CO3 | A | 8 |
| **COMPULSORY QUESTION** | | | | | |
| 24. | a. | Illustrate the following MongoDB operations to organize bank account details such as customer name, accno, email, phone, and balance using MongoDB shell commands.  i) create database ‘ABC\_Bank’  ii) create a collection ‘SavingAccount’  iii) insert five account information  iv) display the balance of a particular account  v) change the balance of a particular customer  vi) delete a particular customer’s detail | CO3 | U | 6 |
|  | b. | Develop a Node JS program to display all the student details such as name, regno, email, cgpa, and academic credits in a MongoDB database “College” with the collection “Students” using an HTML table layout. | CO4 | A | 6 |



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| **Q. No.** | **Questions** | | **CO** | **BL** | **Marks** |
| **PART – A (10 X 1 = 10 MARKS)**  **(Answer all the questions)** | | | | | |
| 1. | Which tag is used to create a paragraph in HTML? | | CO1 | A | 1 |
| 2. | Define style sheet. | | CO1 | R | 1 |
| 3. | Define DOM. | | CO1 | R | 1 |
| 4. | Expand JSON. | | CO1 | R | 1 |
| 5. | Identify the purpose of JSON. | | CO1 | A | 1 |
| 6. | Is AngularJS a structural framework? Justify it. | | CO | U | 1 |
| 7. | List any two key features of angularJS. | | CO2 | R | 1 |
| 8. | Distinguish between Node.JS and JavaScript. | | CO4 | An | 1 |
| 9. | Identify the best database for JSON data. | | CO3 | A | 1 |
| 10. | Write the purpose of Name Space in MongoDB. | | CO4 | R | 1 |
| **PART – B (6 X 3 = 18 MARKS)**  **(Answer all the questions)** | | | | | |
| 11. | Write a HTML code to display an image in browser. | | CO2 | A | 3 |
| 12. | What is a CSS selector? | | CO1 | R | 3 |
| 13. | Identify jQuery selector in JavaScript. | | CO3 | A | 3 |
| 14. | Write a JavaScript program to convert temperatures from Celsius to Fahrenheit and vice versa. | | CO3 | R | 3 |
| 15. | Compare angular JS and JavaScript. | | CO4 | A | 3 |
| 16. | List the different types of NoSQL | | CO4 | R | 3 |
| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.No. 17 to 23, Q.No. 24 is Compulsory)** | | | | | |
| 17. | a. | Design the following table layout using HTML5 table tags and populate the rows to display the results of five employees.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | SI.No | Employee Details | | | | | | Emp.No | Name | Emp.Dept | Salary | Mobil.No | | 1 | Emp100 | xyz | Production | 54000 | 9800xxxxxx | | CO6 | C | 12 |
|  |  |  |  |  |  |
| 18. | a. | Write about the HTML lists: (a) Unordered Lists (b) Ordered Lists (c) Definition Lists | CO1 | R | 6 |
|  | b. | Write JavaScript code to get a message from the user and display it in the browser status bar. | CO3 | An | 6 |
|  |  |  |  |  |  |
| 19. | a. | Demonstrate JavaScript function events with suitable example. | CO2 | U | 6 |
|  | b. | Develop an HTML web page with appropriate JavaScript as per the following design and read the value of A and B, then automatically display the sum of A and B in the result text box. | CO6 | C | 6 |
|  |  |  |  |  |  |
| 20. | a. | Explain some of the most commonly used directives in the AngularJS application. | CO2 | R | 12 |
|  |  |  |  |  |  |
| 21. | a. | Explain the following JSON components with examples.  i)data types ii)parse iii)stringify iv)objects v)arrays | CO3 | E | 12 |
|  |  |  |  |  |  |
| 22. | a. | Examine Event-Driven Programming in Node.js | CO4 | An | 12 |
|  |  |  |  |  |  |
| 23. | a. | Discuss the Mongoose CRUD Operations with an example. | CO4 | R | 12 |
| **COMPULSORY QUESTION** | | | | | |
| 24. | a. | Write JavaScript to validate the following fields of the Registration page.  1. First Name (Name should contain the alphabet and the length should not be less than 6 characters  2. Password (Password should not be less than 6 characters in length).  3. E-mail ID (should not contain any invalid and must follow the standard pattern name@domain.com)  4. Mobile Number (The phone number should contain 10 digits only).  5. Last Name and Address (should not be Empty) | CO4 | R | 12 |