PES University, Bengaluru
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UE18CS325

DECEMBER 2020: END SEMESTER ASSESSMENT (ESA) B TECH V SEMESTER

UE18CS325 – Web Technologies II

Time: 3 Hrs	Answer All Questions	MaxMarks: 100

1	a)	You are asked to design a website called "MyArogya app" which receives all the symptoms and recent actions of a patient and submits it to the server. The server processes the data and alerts if the patient has got chances of infection. It just responds a **"YES. Susceptible to Infection"** or **"NO. Very less chance of infection"**. If less consumption of network resources and cross domain access of resources is considered while designing the website, which method will you use to make a GET request to the server? Justify and implement the same.	5
	b)	Explain the concept of CORS. List the criteria's for a browser to make an HTTP request a simple one or a preflighted request. Discuss in detail.	5
	c)	Create a HTML page with three text fields ✓ Coursecode ✓ Semester ✓ Subject Title The Coursecode field is editable. The other two are not. Perform the below actions on the page: ▪ When a user enters a Coursecode in the text box and blurs out , a AJAX call needs to be made to "getCourseDetails.php" to fetch the Semester and SubjectTitle for that CourseCode ▪ The response is received as JSON whose structure is as shown below.	7

```
{
"coursecode" : "UE18CS325",
"Semester" : "Fifth",
"SubjectTitle" : "WEBTECHII"
}
```

The details should be extracted and populated in the respective fields.

- Also History needs to be maintained so that the Back and Forward buttons works.

Note: Assume the server returned a proper JSON response and write only the client side code.

	d)	Compare and contrast JSON vs XML on three relevant criteria's. Can you represent the details of an employee i.e name, id, address in both JSON and XML formats?	3
2	a)	Briefly explain the periodic refresh and fallback pattern and implement the same for a scoreboard application. The scores should be updated in an interval of 3 seconds. Handle the backoff, if the response is not received in 5 seconds. Write only the client side code.	6
	b)	What are the advantages of using SSE over XHR for implementing Streaming? As part of reverse AJAX, Write the server side PHP code to fire an SSE event called "PES" every 3 seconds. The data for the event should be "One more event". On the client side, write a code to handle the event and alert the received string. The application should reconnect after 5 seconds if the current request response cycle ends.	6
	c)	Explain with a neat diagram how long polling is different from short polling technique?	3
	d)	List the architectural constraints of a RESTful system and map the most common HTTP methods to the CRUD operations.	5
3	a)	What are the important features of NodeJS. Explain with a neat diagram, explain the Event Driven Architecture	5

b)	▪ Create a simple calculator using NodeJS that can be accessed using a URL http://localhost:8080?a=8&b=6. The values a and b are given by client and the response is returned with the sum, difference and the product of a and b. ▪ Also write a middleware should log every request's a and b values.	6
c)	Using Express framework, Write the route for the following GET /restaurant?rating=1 This should return the list of all restaurants which has top ranking from a database called "PartyPlanner" and collection called "Restaurants". The rating should be taken from the request URL	5
d)	Explain detail about the various types of modules in NodeJS and write a code to read contents of a file called "webtech.txt" and display only the first 10 characters from it.	4

4	a)	Create a table by iterating over each items of the course collection and display a table as shown below. Make use of the suitable structural directive in Angular. Write both course.component.html and course.component.ts	4

courseID	CourseTitle	Duration
1	Computer Basics	06Months
2	Computer Networks	18Months
3	Web Engineering	24Months
4	Software Engineering	24Months
5	Database Systems	18Months
6	Cloud Computing	12Months

	b)	Using a neat Schematic diagram, Explain the Angular lifecycle hook methods in the order from Initialization till onDestroy. Describe in detail only about ngOnInit, ngOnChanges and ngOnDestroy.	4

	c)	Create a template driven form in Angular as below	8

Address Details: Template Driven Form

Address Enter Address

City Enter City Name

State State   Postcode Enter Post Code

Country ---Select---

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Create the files as template-driven-form.component.html and template-driven-form.component.ts. Make the basic validations like "Required" ,"min-length" and "max-length"
Hint: Make use of model as given below

```
export interface addressModel {
    address: string,
    city: string,
    state: string,
    postcode: number,
    country: any[],
    agreement: boolean
}
```

	d)	Explain the dependency Injection framework in Angular and its parts in detail	4
5	a)	What is the two connection limit imposed by the HTTP version 1.1? How can this restriction hamper the working of any web page? Give a workaround for this.	3
	b)	Explain the concept of End to End and Hop By Hop compression. Write a code to perform gzip compression to a file using express functions. The compressed file should be cached on the client side by using cache control header.	8
	c)	What are the different types of Cross Site Scripting attacks? Explain each of them with a neat diagram	5
	d)	Briefly explain about the CSRF attack and the ways to overcome them.	4