Instructions: Have to answer one question each from PART A and Part B with project demonstration

General Problems – Part A

1. a.Write a JavaScript function that accepts a string as a parameter and counts the number of vowels within the string.

b. Write a JavaScript program to count the number of words in a string.

CO1, CO2

2. a. Write a JavaScript function to get the number of occurrences of each letter in a specified string.

b. Write a JavaScript function that accepts a string as a parameter and find the longest word within the string

CO1, CO2

3. Write a JavaScript code to handle multiple callback functions using JavaScript promises (use promiseobject.then (onfulfilled,onrejected)). **CO2, CO4**

4. a. Write a JavaScript program to store values into a set, and to retrieve value from the set, to iterate over the set.

b. Write a JavaScript program to store values into a map, and to retrieve value from the map using key, to iterate over the map.

CO2, CO4

5. a. Write a JavaScript code that returns a passed string with letters in alphabetical order. Use addEventListener() method.

b. Write Javascript code using functions to convert the text entered in textbox to lowercase if it's in uppercase, and vice versa on a button click.

CO2, CO4

6. a. Apply JavaScript Arrow function to reverse a given Number. Given Number = 12243; *Expected Output:* 34221

b. Write Javascript arrow function to find factorial of a number.

CO2, CO4

7. Write a JavaScript code to perform Jump Search for a given key and report success or failure. Prompt the user to enter the key and a list of numbers.

CO2, CO4

8. Write JavaScript code to encrypt the text using Caesar Cipher technique. Display the encrypted text. Prompt the user for input and the shift pattern. **CO2, CO4**

9. Write a JavaScript function.

a. To capitalize the first letter of each word in a string.

b. To split a string and convert it into an array of words. **CO1, CO2**

10. a. Write a JavaScript program to list the properties of a JavaScript object.

Sample object:

```
var student = {
name : "C V Raman",
Dept : "ISE",
id : 058 };
```

Sample Output: C V Raman ISE, 056

b. Write javascript code given a string, to reverse each word in the sentence.

(Ex: Welcome to this Javascript Guide! should become emocleW ot siht tpircsavaJ !ediuG)

CO1

Application based Problems – Part B

1. Show how map is different from object to store key value pairs with coding examples and prove Maps perform better than objects in most of the scenarios involving addition and removal of keys.

CO2, CO4

2. Show how a set is different from an array to store the value with a coding example and prove Sets perform better than Arrays in most of the scenarios involving searching values present in it.

CO2, CO4

3. Write a Javascript program to Implement arithmetic operations using Javascript promise and DOM APIs. Display result for each operation synchronously using await () method. (Give delay in each promise object using settimeout() method).

CO2, CO4

4. Write a Javascript program where user passes the location and a function is called which returns a promise, if the location passed is Paris Below is the output expected:
"Let's take a trip to Paris"
If the location is other than Paris, show the error message "Invalid Location" **CO2, CO4**

5. Write a JavaScript program to book a hotel only after booking a flight.
[Hint: To achieve this, the promise returned from the bookHotel function is resolved only after resolving the promise from bookFlight function.
If the promise gets rejected from bookflight then it won't execute the second function.]

CO2, CO4

6. Write an arrow function that will take one parameter weight in Kg. This arrow function will convert Kg to Lbs. Formula is kg*2.2

- If LBS is > 150, then the function should return "obese"
- If LBS is between 100 to 150, the function should return "you are ok"
- If LBS is < 100, then the function should return "underweight" **CO2, CO4**

7. In the Martian land faraway, a new virus has evolved and is attacking the individuals at a fast pace. The scientists have figured out the virus composition, V. The big task is to identify the people who are infected. The sample of N people is taken to check if they are POSITIVE or NEGATIVE. A report is generated which provides the current blood composition B of the person.

POSITIVE or NEGATIVE?
If the blood composition of the person is a subsequence of the virus composition V, then the person is identified as POSITIVE otherwise NEGATIVE. **CO2, CO4**

8. Write a Javascript code to validate the email id using regular expressions. email is a string consisting of 3 parts: username, @ symbol and domain. The first part of an email address is the username. @ Symbol fits in between the username and the domain of your email address. The domain consists of two parts: the mail server and the top-level domain. The mail server is the server hosting the email account ("Gmail"). The top-level domain is the extension, such as .com, .net or .info.

CO1, CO2, CO4

9. Write a JavaScript program using Client-side web APIs to Get the latitude and longitude of the user's position. **CO1, CO2, CO4**

10. Write a JavaScript program to count the number of visitors to keep track of how often a website is accessed and display the number of visitors at the bottom of the homepage. **CO1, CO2, CO4**