

- (vii) Type Script is _____ of Java Script
 (a) sub set (b) super set
 (c) inherited from (d) none of the above.
- (viii) What is Model in MVC?
 (a) Model represents server side data
 (b) Model represents data stored in database
 (c) Model is the lowest level of the pattern responsible for maintaining data
 (d) None of the above.
- (ix) Which of the following directive is used to initialize an angular app?
 (a) ng-model (b) ng-app
 (c) ng-controller (d) None of the above.
- (x) AngularJS expressions are written using.
 (a) double braces like {{ expression}}
 (b) single braces like {expression}
 (c) small bracket like (expression)
 (d) capital bracket like [expression].

Group - B

2. (a) What is Document Object Model? How it differs with DHTML, explain with example.
- (b) What is Lambda function? When it is used, explain with example.
 $(2 + 5) + (2 + 3) = 12$
3. (a) Illustrate the difference with an example between 'let' and 'const'. Explain with example, the concept of variable Hoisting.
- (b) Write the output of the following:

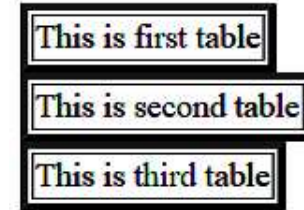
```
<script>
function notifyAll(fnSms, fnEmail) {
  console.log('starting notification process');
  fnSms();
  fnEmail();
}
notifyAll(function() {
  console.log("Sms send ..");
},
function() {
  console.log("email send ..");
});
console.log("End of script");
```

- ```
//executes last or blocked by other methods
</script>
```
- (c) Write a program to develop a simple calculator which will take an expression as an input in text box, compute the expression and display the result.(use java script and css).

$(3 + 3) + 3 + 3$

### Group - C

4. (a) Write a program in jquery to get the following output.



- (b) What is the difference between jQuery.get() and jQuery.ajax()? What is the proper way in jQuery to remove an element from the DOM? How is a Promise resolved?

$6 + (3 + 3)$

5. (a) What are the closures in javascript? Explain with example.
- (b) With an example explain javascript map method. What is an arrow function in javascript?

$6 + (3 + 3)$

### Group - D

6. (a) What is typescript? Explain the benefits of typescript.
- (b) Write a typescript code to show the operation of Interface and Class. What are the modules available in typescript? Discuss the modules with example.

$(2 + 3) + (2 + 2 + 3)$

7. (a) Discuss the features of Node.js.
- (b) Define callback in respect of Node.js. Give an example of event driven programming with Event Emitter class in Node.js.

$4 + (4 + 4)$

**Group – E**

8. (a) Describe the core features of AngularJS.  
 (b) State advantages and disadvantages of AngularJS. Describe MVC architecture with suitable diagram.

**4 + (4 + 4) = 12**

9. (a) State the directives of AngularJS. Give an example to showcase all the directives of AngularJS.

- (b) Create an app with the following components:  
 A template with two buttons and a simple message, model consisting of a string named spice and controller with two functions that set the value of spice.

**(2 + 4) + 6 = 12****INTERNET TECHNOLOGY  
(INFO 4101)****Time Allotted : 3 hrs****Full Marks : 70***Figures out of the right margin indicate full marks.**Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.**Candidates are required to give answer in their own words as far as practicable.***Group – A  
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) JavaScript objects can be created with the new keyword, and with the \_\_\_\_\_ function.  
 (a) object() (b) object.create()  
 (c) javascript.object() (d) create.object().
- (ii) Which built-in method returns the index within the calling String object of the first occurrence of the specified value?  
 (a) getIndex() (b) location()  
 (c) indexOf() (d) None of the above.
- (iii) What does the term DOM stands for?  
 (a) Document Object Model (b) Dynamic Object Model  
 (c) Discrete Object Model (d) None of the above.
- (iv) Which of the following function of Array object removes the last element from an array and returns that element?  
 (a) pop() (b) push() (c) join() (d) map().
- (v) jQuery code to set the background color of all span elements to blue is  
 (a) \$("span").style("background-color","blue");  
 (b) \$("span").manipulate("background-color","blue");  
 (c) \$("span").css("background-color","blue");  
 (d) \$("span").layout("background-color","blue");
- (vi) Which of the following is true about writable stream?  
 (a) Writable stream is used for write operation  
 (b) Output of readable stream can be input to a writable stream  
 (c) Both of the above  
 (d) None of the above.