Group – E

8. (a) Describe the process of interpolation in the context of Angular 4 with example.

   (b) Explain the file structure of app component in the context of Angular 4. Discuss how Event Binding works in Angular 4.

   4 + (4 + 4) = 12

9. (a) Create an example which shows a login form with input as username and password using Angular 4. If the login is successful, it will proceed to the next form of Customer Details with firstname, lastname, address and phoneno fields. Once the details are entered and submitted, a dialog box will appear to show the same details. In addition, create following four components - header, footer, userlogin and mainpage.

   (b) Write sample code to create a structure for the @NgModule which contains an object which has declarations, imports, providers and bootstrap in Angular 4.

   (4 + 4) + 4 = 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
<u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> 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) JSON stands for "_____".
   (a) JavaScript Object Notation   (b) JavaScript Original Notation
   (c) JavaScript Oriented Notation   (d) JavaScript Ordered Notation

   (ii) BackboneJS is a _____.
   (a) lightweight JavaScript library   (b) C++ library
   (c) Perl library   (d) R library

   (iii) The Java Script object has three object attributes namely_____ .
   (a) Class, parameters, object's extensible flag
   (b) Prototype, class, objects' parameters
   (c) Prototype, class, object's extensible flag
   (d) Native object, Classes and Interfaces and Object's extensible flag

   (iv) What is the prototype represents in the following JavaScript code snippet?
   function f() {};
   (a) Function f   (b) A custom constructor
   (c) Prototype of a function   (d) Not valid.

   (v) The purpose of *extensible* attribute is to _____ .
   (a) make all of the own properties of that object non configurable
   (b) to configure and bring a writable property
   (c) "lock down" objects into a known state and prevent outside tampering
   (d) to include new properties into the object

   (vi) Identify the process done in the following JavaScript code snippet?
   o = {x:1, y:{z:[false,null,""]}};
   s = JSON.stringify(o);
   p = JSON.parse(s);
   (a) Object Encapsulation   (b) Object Serialization
   (c) Object Abstraction   (d) Object Encoding.

(vii) The pop( ) method of the array does which of the following task?
(a) Decrements the total length by 1
(b) Increments the total length by
(c) Prints the first element but no effect on the length
(d) Updates the element.

(viii) What will happen if reverse( ) and join( ) methods are used simultaneously?
(a) Reverses and stores in the same array
(b) Reverses and concatenates the elements of the array
(c) Reverses
(d) Stores the elements of an array in normal order.

(ix) When does the function name become optional in JavaScript?
(a) When the function is defined as a looping statement
(b) When the function is defined as expressions
(c) When the function is predefined
(d) When the function is called.

(x) What will be the possible output of the following JavaScript code?
var a = [1,2,3,4,5];
a.slice(0,3);
(a) Returns [1,2,3]   (b) Returns [4,5]
(c) Returns [1,2,3,4]   (d) Returns [1,2,3,4,5].

Group – B

2. (a) Distinguish between creating JavaScript Objects with new keyword and Object.create( ) method with example.

(b) Describe the role of the dot (.) and square bracket ([]) operators to obtain the value of a property(JavaScript Object's property) with example. Write a JavaScript function which will add a nonenumerable extend( ) method to Object.prototype.

4 + (4 + 4) = 12

3. (a) Draw and explain the DOM representation of the following HTML document:
<html><head>
<title>Sample Document</title>
</head><body>
<h1>An HTML Document</h1>
<p>This is a <i>simple</i> document.
</html>.

(b) Define the following ways to select the DOM elements with example
(i) with a specified id attribute

(ii) with a specified name attribute
(iii) with the specified tag name
(iv) with the specified CSS class or classes.

4 + 8 = 12

Group – C

4. (a) What event property is used as the basis for determining what element has received an event using jQuery's persistent or live events? Explain what happens.

(b) Explain the process of creation of a custom event handler in the context of JQuery. Write sample code that might be used to set both the value and the class attributes of an <input> element using JQuery.

(1 + 3) + (4 + 4) = 12

5. (a) State the fundamental rule of lexical scoping in the context of the JavaScript function. Write sample code to give a example of the private property accessor methods using closures.

(b) Explain the primary purpose of bind( ) in the context of the JavaScript function with example. Define callable objects and Higher-Order Functions.

(2 + 4) + (4 + 2) = 12

Group – D

6. (a) Describe the following destructuring types with example in the context of Typescript.
(i) Array destructuring (ii) Tuple destructuring (iii) Object destructuring.

(b) Explain the concept of optional properties of an interface in the context of Typescript. State the differences between the static and instance sides of classes in the context of Typescript.

6 + (3 + 3) = 12

7. (a) What is Callback in the context of Node.js? How many types of stream objects are available in Node.js. Explain how Piping mechanism connect output of one stream to another stream in Node.js.

(b) Describe on and emit properties of EventEmitter class in the context of Node.js with example.

(2 + 2 + 2) + 6 = 12