(9)

[This question paper contains 8 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. **Section A** is compulsory.

3. Attempt any **FOUR** questions from **Section B**.

SECTION A

1. (a) Describe port address translation in Network Address Translation with the help of an example.

(2)

P.T.O.

(b) Explain stub network with the help of an example. Give a situation where stub networks are beneficial.

(2+1)

(c) What is the output of the following code: (3)

```javascript
varregularFunc = function (arg) {
arg = arg || "Hello";
  return arg.toUpperCase();
}
document.write(regularFunc('Hello World'));
document.write(regularFunc());
```

(d) What is the output of the following code: (5)

```html
<html>
<head>
<script>
$(document).ready(function() {
$("button").click(function() {
$("h1").before('<h1>This is newheading</h1>');
});
$("button").click(function() {
var $newItem=$("<p>New paragraph added</p>");
$("h1").after($newItem);
 });
});
</script>
```

```
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>
<button>Click Me</button>
</body>
</html>
```

(e) Write JQuery and HTML code to create a form accepting car name, car model and car manufacture year from the user. When the user clicks on Submit button, the data from the form is sent to Register.php. (5)

(f) Write HTML and Javascript code to create a form that accepts two numbers, num1 and num2. The form also has two buttons, Sum and Maximum. On clicking buttons, Sum should display the sum of num1 and num2, and Maximum should display the maximum of the two numbers, respectively. (5)

(g) Explain the following : (2×6)

    (i) ping

    (ii) netstat

    (iii) Cookies

<div align="right">P.T.O.</div>

(iv) VOIP

(v) Proxy server

(vi) Search engine

SECTION B

2. (a) What is the importance of Network Address Translation? Consider the following scenario :

Host A ------ 10.1.1.1—NAT Router—192.168.1.1 ------ Host B
10.1.1.10   192.168.1.5

Give the following addresses for the above scenario :

(i) Inside local

(ii) Inside global

(iii) Outside local

(iv) Outside global   (4)

(b) Differentiate between static and dynamic routing. Explain the following with the help of an example :

(i) Default static route

(ii) Floating static route   (2+4)

3. Consider you are using the subnet mask of 255.255.255.240 to subnet your class C network with IP address as 192.168.1.0.

Write the following :

  (i) Number of subnets

  (ii) Number of hosts per subnet

  (iii) Network address and broadcast address of first three networks

  (iv) First usable IP address and last usable IP address of first three networks　　(2+2+3+3)

4. (a) Create an HTML file, order.html, to accept choices from the user :　　(2+1+3+1)

    Username: [Textbox]

    Order details:

    Starters: French fries or Kebabs [List with respective prices]

    Beverages: Cola or Juice [List with respective prices]

    Main: Burger or Pizza [List with respective prices]

    ORDER NOW [Button]

<div align="right">P.T.O.</div>

Your order details are: [div element]

Create Javascript file, getVal.js, to perform the following :

    (i) Access the value of user entered data and the div element.

    (ii) Using function calc_order, calculate the order value based on the user input.

    (iii) Invoke the function calcorder when the user clicks on ORDER NOW button and the order details are displayed on the div element.

(b) Explain Immediately Invoked Function Expression with the help of an example.   (3)

5. (a) Design the following form using HTML :   (2+4)

Candidate Name: [Textbox]

Candidate Qualification: Undergraduate with id "one"

Postgraduate with id "two"   [Unordered list]

Click to view.   [Button]

Div element with id "tag"

Using .each() function in JQuery, get access to all the list elements of the unordered list "Candidate Qualification". Insert a new entry to the end of this list with the ids of each list element, that is, the last two entries should be "one" and "two", respectively.

(b) What is the difference between getElementById() and getElementByName() functions? Give an example of each.   (2+2)

6. (a) Illustrate the importance of serialize() function in AJAX with the help of any example.   (5)

(b) What are the benefits of using BOOTSTRAP in web development? Describe BOOTSTRAP Grid system.   (2+3)

7. (a) Explain each line of the following Node .js code: (5)

```
const express = require('express')
const app = express()
app.get('/', (req, res) => {
res.send('Hi!')
})
```

P.T.O.

```
const server = app.listen(3000, () => console.log
('Server ready'))

process.on('SIGTERM', () => {

server.close(() => {

    console.log('Process terminated')

  })

})
```

(b) What is the use of following methods in AJAX?

    (i) $.get()

    (ii) $.post()

    (iii) $.getJSON()

    (iv) $.getScript()

    (v) $.ajax()   (5)