Unique paper code: 6202452402
Name of Paper: Full Stack Web Development - 1
Name of the Course: B.Voc Software Development
Semester: 4
Duration: 3 Hours
Maximum Marks: 90

Instructions for Candidates:

- **Write your Roll No. on the top immediately on receipt of question paper.**
- **The paper has two sections. Section A is compulsory. Each question is of 5 marks.**
- **Attempt any four questions from Section B. Each question is of 15 marks.**

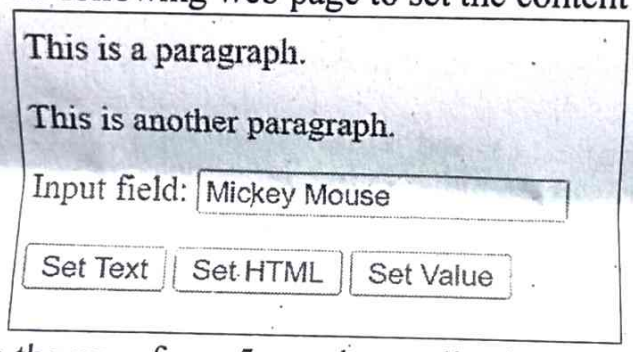
Section A

1 a) How does MongoDB differ from traditional relational databases? 5

b) Write MongoDb queries for the following sql quries 5

i. select * from items;
ii. select order_id from items;

c) Create the following web page to set the content on DOM: 5



d) Explain the use of any 5 angular application files with their extensions. 5

e) Create an angular class "friend" and initialize the attributes- `frnd_id`, `name` and `age` through constructor. 5

f) Differentiate between the following methods used in MongoDB 5

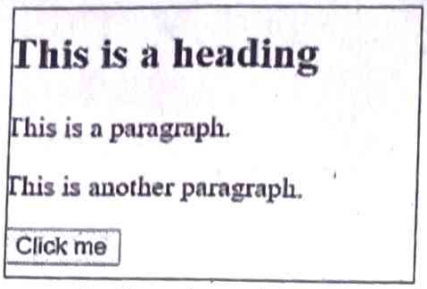
1. updateOne() and updateMany()
2. deleteOne() and deleteMany()

Section B

2 a) Briefly explain the following: 7

i. `$(this).hide()`
ii. `$("p:first").hide()`
iii. `$(".test").hide()`
iv. `$("#test").hide()`
v. `$("ul li:first").hide()`
vi. `$("ul li:first-child").hide()`
vii. `$("tr:even").hide()`

b) Create the following HTML page and write jQuery code for **"clickme"** button to hide the text of all the paragraph elements. 8



3 a) Write HTML code to execute the given jQuery code 7

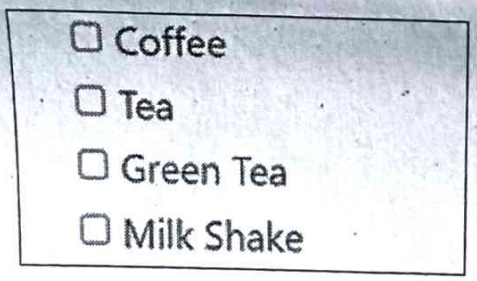
```
$("input").focus(function(){
  $(this).css("background-color", "#cccccc");
});
```

b) Write a single line jQuery code for the following instructions: 8

i. To insert the text "YES!" at the end of a <p> element.
ii. To remove the element.
iii. To remove the list items of <ol> element.
iv. To change the text of a element to "Hello World"

4 a) *Explain the types of databinding used in Angular with appropriate examples.* 7

b) *Create* `app.component.ts` *and* `app.component.html` *files to show the list of items as given in the following webpage.* 8



5 a) Write HTML code to execute the given jQuery code. 7

```
$("#p1").dblclick (function(){
 alert("Enter Wrong Password");
});
```

b) Differentiate between the following 8

i. `One way` and `Two-way` data binding methods of Angular.
ii. `selectors` and `events` in jQuery.

6 a) Write the MongoDb query operators for the following: 7

i. To add an element to an array
ii. To remove the field from the document.
iii. To perform a text search.
iv. To renames the field
v. To set the field value to the current date.
vi. To increment the field value.
vii. To add distinct element to an array.

b) Write a MongoDB query for the following: 8

- Create a new database `College` and collection `student`.
- Insert two records `{name: "Mahesh", gender: "male", course: "Technology"}`, `{name: "Mukesh", gender: "male", course: "Humanities"}`.
- Find all `male` students of `Technology` course.
- Delete all students of `Humanities` course

[This question paper contains 4 printed pages.]

Your Roll No.....2713

Sr. No. of Question Paper : 3694 **H**

Unique Paper Code : 6202452403

Name of the Paper : Data Communication and Networks

Name of the Course : **B.Voc.**

Semester : IV

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt total **5** questions. **Q1** (**30** marks) is compulsory to attend.
3. Rest, Attempt any **4** questions (**15** marks each) more.

1. (a) What Is Data Communication? Explain with example. (5)

P.T.O.

(b) What is IEEE? Explain any two IEEE standards. (3)

(c) Explain peer to peer network with example. (4)

(d) Explain LAN, MAN and WAN. (3)

(e) Explain the client server architecture. (5)

(f) What is guided media? Explain any two types of guided media. (4)

(g) Write the full form : (2)

(i) CDMA

(ii) GSM

(h) Choose the correct option : (2)

(i) NIC

(A) A network interface card (NIC) is a device that allows a computer to communicate with another device.

(B) A network interface card (NIC) is a central device that divides a network connection among several devices.

(C) A network interface card (NIC) is a networking device that connects all of the devices on the network to transport data to another device.

(ii) Which of the following types of cable is installed at the government level?

(A) Twisted pair cables

(B) Coaxial cable

(C) Fiber optic cable

(iii) True/False (2M)

(A) FTP is Format Transfer Protocol. (T/F)

(B) HTTP is Hyper Text Transfer Protocol. (T/F)

2. (a) What is topology? Explain different types of topology? (10)

(b) What is IP address? Explain IPv4 different classes. (5)

3. (a) Write short notes on : (10)

(i) TCP/IP

(ii) URL

(b) What is OSI reference model? (5)

4. (a) Differentiate between : (4×3=12)

(i) HTTPs and HTTP

(ii) PoP and SMTP

(iii) DNS and Telnet

(b) Explain ARP. (3)

5. (a) Explain half and fill duplex with diagram. (10)

(b) Explain layer-2 switching. (5)

6. (a) Explain various functions and protocols of internet layer. (10)

(b) Explain various functions of transport layer. (5)

1. (a) Which software life cycle model allows for iterative development and incorporates risk analysis? (1)

(b) Write any two characteristics of software as a product. (2)

(c) Differentiate between Verification and Validation. (3)

(d) Mention any THREE non-functional requirements on software to be development. (3)

(e) What is the role of data dictionary? (3)

(f) What is the prime objective of software engineering? (3)

(g) What problems are likely to arise if two modules have high coupling. (3)

(h) A simple stand – alone software utility is to be developed in 'C' programming by a team of software experts for a computer running Linux and the overall size of this software is estimated to be 20,000 lines of code. Considering (a, b) = (2.4,1.05) as multiplicative and exponential factor for the basic COCOMO effort estimation equation and (c, d) = (2.5, 0.38) as multiplicative and

exponention factor for the basic COCOMO development time estimation equation, approximately how long does the software project take to complete? (4)

(i) Differentiate between data flow diagram and data dictionaries. (4)

(j) List the important properties of modular system. (4)

2. (a) Write short notes on the following terms : (2.5×4=10)

(i) UMBRELLA ACTIVITIES

(ii) SPIRAL MODEL

(iii) SRS

(iv) VALIDATION TESTING

(b) List out the five core principles of Software Engineering. (5)

3. (a) What is CMMI and explain about CMMI models in detail. initial. (10)

(b) What is Requirement Elicitation and how it is done. (5)

4. (a) What is DFD? Draw a DFD of a library management system. (10)

(b) What is Architectural Design and why it is important in building a software. (5)

5. (a) Explain in detail about steps followed in Risk Management with diagram. (10)

(b) Define module cohesion and explain 5 types of cohesion. (5)

6. (a) Calculate the function Doint, productivity, documentation, and cost per function for software application with multiple Processing Factors 5,1, 0, 4, 3, 5, 4, 3, 4, 5, 2, 3, 4, 2 by using following given Date: The number of EI(Avg): 22, The number of EO(Low): 45, The number of EI(High): 06, The number of ILF(Avg): 05, The number of ELF(Low): 02, Effort: 37 MM, Software technical documents: 250 pages, User related documents: 120 pages and Budgeting/Cost: $7520 per month. (10)

(b) Explain any one technique of white box testing. (5)