CA

Question 1 [3 + 3 + 3 + 3 + 3 = 15 Marks]

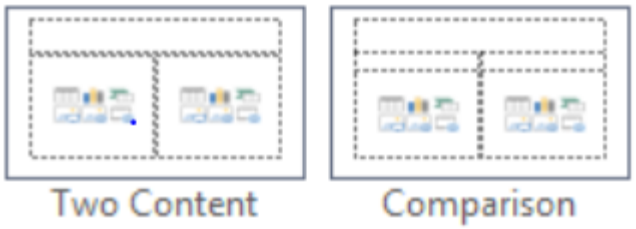
a) List steps to enter the table of contents

Put your cursor where you want to add the table of contents.Go to **References** > **Table of Contents**. and choose an automatic style.If document is changed,update the table of contents by right-clicking the table of contents and choosing **Update Field**.

b) What is an IP address? What is the significance of an IP address?

An IP address is a unique address that identifies a device on the internet or a local network. IP stands for "Internet Protocol," which is the set of rules governing the format of data sent via the internet or local network.
The purpose of an IP address is to handle the connection between devices that send and receive information across a network. The IP address uniquely identifies every device on the internet; without one, there's no way to contact them.

c) State the difference between the "Two Content" slide and a "Comparison slide" in PowerPoint



d) What are the main reasons behind a computer virus? List all the major sources of viruses.

Reason could be any infectious files, links that are executable.
Source of Viruses: Torrent files, Downloading from unsecure websites, crack files, Emails and USBs

e) What is the difference between a "tag" and an "element" in HTML?

HTML Tags: Tags are the starting and ending parts of an HTML element. They begin with < symbol and end with > symbol. Whatever written inside < and > are called tags.

Example: `<b> </b>`

HTML elements: Elements enclose the contents in between the tags. They consist of some kind of structure or expression. It generally consists of a start tag, content and an end tag.

Example: `<b>This is the content.</b>`

Question 2 [8 + 4 + 6 = 18Marks]

a) Fill in the missing Information in the table below about Database:

Example: Statement: _____Alter_____ Type:_____DDL_____

Statement: _____INSERT_____ Type: _____**DML**_____

Statement: _**CREATE/DROP/ALTER**__ Type: _____DDL_____

Statement: _____ALTER_____ Type: _____**DDL**_____

Statement: __ **GRANT/REVOKE**___ Type: _____DCL_____

Statement: _____DELETE_____ Type: _____**DML**_____

Statement: ___ **GRANT/REVOKE**__ Type: _____DCL_____

Statement: __**INSET/UPDATE/DELETE**_ Type: _____DML_____

Statement: _____DROP_____ Type: _____**DDL**_____

b) Define the following terms with the help of at least one examples:

1. Meta-data.

   The dictionary or catalog stores information about the database itself This is data about data or 'metadata'

2. Unstructured Data.

   Very limited indication of data type E.g., a simple text document

3. Semi-structured Data.

   Data may have certain structure but not all information collected has identical structure Some attributes may exist in some of the entities of a particular type but not in others

4. Tuples

   Tuples are the rows of any tables, Information is stored as tuples or records in relations or tables.

c.) Haya is a resident of Islamabad and has to access the website *https://scikit-learn.org/stable/modules/generated/sklearn.neighbors.KNeighborsClassifier.html* using the internet services of Nayatel.

1. What is a URL?

https://scikit-learn.org/stable/modules/generated/sklearn.neighbors.html

2. What is the type of protocol in the above example?

https

3. Identify the Domain name?

scikit-learn.org

4. Identify the path and file name?

Path: stable/modules/generated/ File Name:sklearn.neighbors.KNeighborsClassifier.html

5. Who is the internet service provider?

Nayatel

6. What is the purpose of Uniform Resource Locators?

used to specify addresses on the World Wide Web Or To identify a Web pages exact location

Question 3 [5+5+5=15Marks]

Read the given scenario carefully and answer the questions accordingly:

A waiter takes an order at a table, and then enters it online via one of the six terminals located in the restaurant dining room. The order is routed to a printer in the appropriate preparation area: the cold item printer if it is a salad, the hot item printer if it is a hot sandwich, or the bar printer if it is a drink. A customer's meal check-listing (bill) the items ordered and the respective prices are automatically generated. This ordering system eliminates the old three-carbon-copy guest check system as well as any problems caused by a waiter's handwriting. When the kitchen runs out of a food item, the cooks send out an 'out of the stock message, which will be displayed on the dining room terminals when waiters try to order that item. This gives the waiters faster feedback, enabling them to give better service to the customers. Other systems feature aid management in the planning and control of their restaurant business. The system provides up-to-the-minute information on the food items ordered and breaks out percentages showing sales of each item versus total sales. This helps management plan menus according to customers' tastes. The system also compares the weekly sales totals versus food costs, allowing planning for tighter cost controls. In addition, whenever an order is voided, the reasons for the void are keyed in. This may help later in management decisions, especially if the voids are consistently related to food or service. Acceptance of the system by the users is exceptionally high since the waiters and waitresses were involved in the selection and design process. All potential users were asked to give their impressions and ideas about the various systems available before one was chosen.

Questions:

1. What type of system has been used in the above-mentioned scenario, define it briefly? Comment what could be done better.

Combination of business information and computer-based system is used in given scenario. Business information system is defined as procedure using IT infrastructure to generate desired information. Computer based system is defined as combination of IT and business processes to take decisions to carryout business. Performance can be improved by introducing digital feedback system for customers to improve things in restaurant.

2. Identify different components of the information system discussed in the given scenario and assign them proper categories.

Following table shows the mentioned components of system with categories:

Category	Components
People	Waiter, Waitress, Customer
Computer system	Cold item printer, Hot item printer, bar printer
Data	Meal check-listing, Message, Sales, food costs

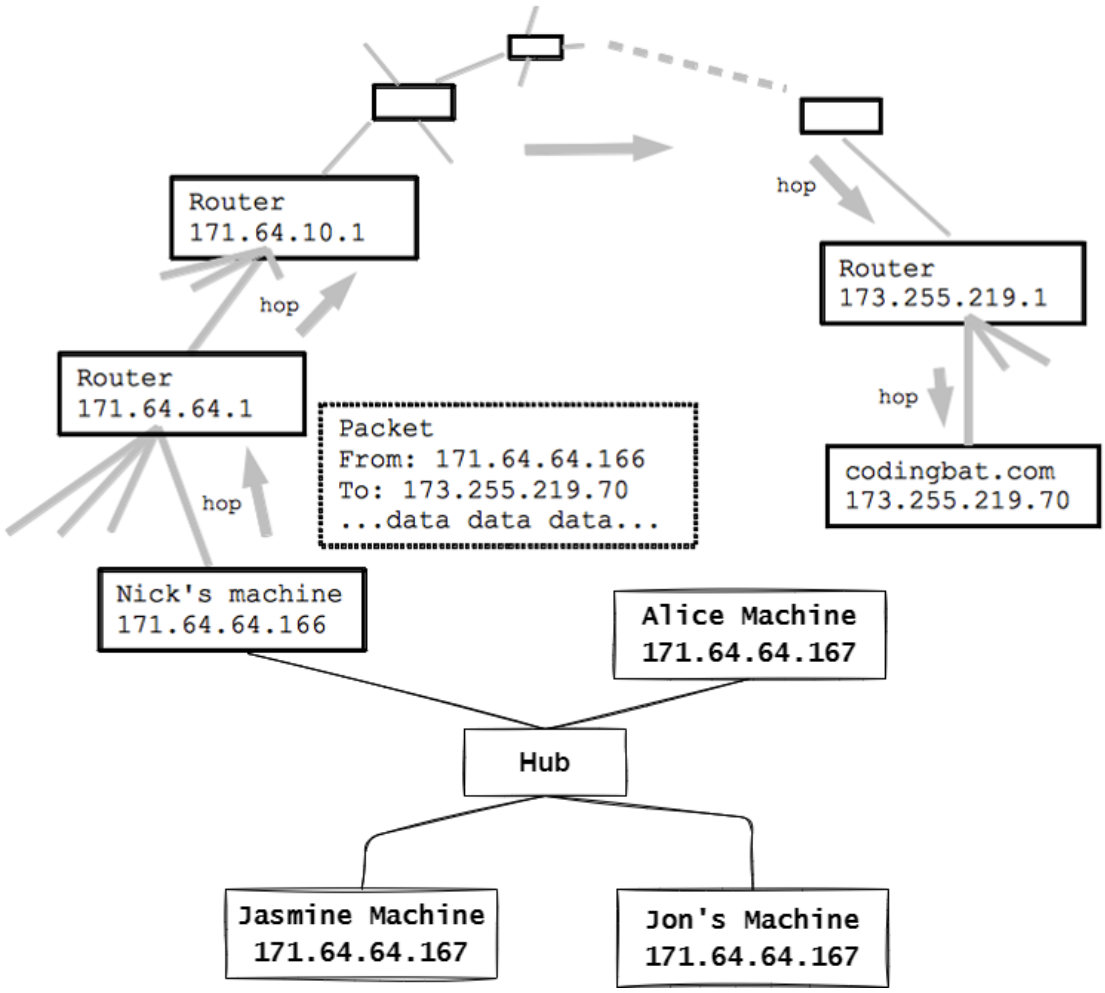
3. Information system has their effect on society. Discuss what type of effect the above-mentioned system has on its customers?

Proper information system has positive impact on society. Above scenario have following effect on customers:

1. Trust of customers upon restaurant
2. No waiting time to confirm whether desired food is available or not.
3. Proper system to review customer dislike food
4. No confusion in customer's order

Question 4 [5 + 5 =10 Marks]

Considering the scenario given in the image and answer the questions below:



Scenario 1:

You can see a Local network containing Jasmine, Jon, Nick and Alice's machines. Nick and Alice try to send a message to Jasmine at the same time which results in a collision. In the network Exponential backoff is applied to resolve the collisions. What happens when the collision happens? Briefly explain the given scenario:

In an Exponential backoff at each collision the waiting time is increased. When the collision happens a random time slot let's say 10 seconds for Nick and 15 seconds for Alice is added to resolve the collision.
If the collision happens again the waiting time will be increased again. Let's say instead of 15 seconds Alice has to wait for 25 seconds.

Scenario 2:

You can see a data packet that is being sent from Nick's machine to a website codingbat.com Describe in detail the life cycle of this data packet. Mention all the protocols and paths involved. When Nick writes the address codingbat.com in the browser what steps are involved before the packet is sent out to the Router.

Just check that the students have mentioned and described correctly about Domain name server, IP address, MAC Address and Routing of the data packet forms source to destination.

Question 5 [12 Marks]

Convert the following number systems.

Decimal	Binary	Octal	Hexa-decimal
33	100001	41	21
2.5625	10.1001	2.44	2.9
449	111000001	701	1C1
447	110111111	677	1BF

Question 6 [8 + 7 = 15 Marks]

a) Complete the following table:

=IF (C2<=4, "OK", "NOT OK")

=CONCATENATE ("it's ", C2,"to have ", D2,"in lunch")

	A	B	C	D	E	F
1	***Sr.No***	***Quantity***	***If Formula***	***Fruits***	***Lunch***	***Maximum***
2	1	4		Apple		
3	2	6		Orange		
4	3	1		watermelon		
5	4	2		Mango		
6	5	8		Kiwi		
7	6	9		Banana		
8	7	6		Apricot		
9	8	2		Olive		
10	9	2		Grape		
11	10	5		Watermelon		
12	11	4		Kiwi		
13	12	3		mango		

=MAX (B2:B13)

Solution:

	A	B	C	D	E	F
1	***Sr.No***	***Quantity***	***If Formula***	***Fruits***	***Lunch***	***Maximum***
2	1	4	OK	Apple	it's OK to have Apple in lunch	9
3	2	6	NOT ok	Orange	it's NOT ok to have Orange in lunch	
4	3	1	OK	watermelon	it's OK to have watermelon in lunch	
5	4	2	OK	Mango	it's OK to have Mango in lunch	
6	5	8	NOT ok	Kiwi	it's NOT ok to have Kiwi in lunch	
7	6	9	NOT ok	Banana	it's NOT ok to have Banana in lunch	
8	7	6	NOT ok	Apricot	it's NOT ok to have Apricot in lunch	
9	8	2	OK	Olive	it's OK to have Olive in lunch	
10	9	2	OK	Grape	it's OK to have Grape in lunch	
11	10	5	NOT ok	Watermelon	it's NOT ok to have Watermelon in lunch	
12	11	4	OK	Kiwi	it's OK to have Kiwi in lunch	
13	12	3	OK	mango	it's OK to have mango in lunch	

++

b) Write down the excel formula for assigning grades, the criteria will be the number of complaints that are lodged against the customer service center. This means the fewer the complaints; the more is the quality of service. i.e.,

	G	H
1	Criteria	Grade
2	Less than 10 complaints	A
3	Less than 20 complaints	B
4	Less than 30 complaints	C

Fill the following table given below by assigning grades;

	A	B	C
1	City Name	Customer complaints	Grade of Service
2	Pinewood	8	A
3	Wilroads Ga	24	
4	Renton	27	
5	Jeddito	28	
6	Seattle	30	
7	Whitsett	29	
8	Aliquippa	18	
9	Ebro	25	

	A	B	C
1	City Name	Customer complaints	Grade of Service
2	Pinewood	8	A
3	Wilroads Ga	24	C
4	Renton	27	C
5	Jeddito	28	C
6	Seattle	30	C
7	Whitsett	29	C
8	Aliquippa	18	B
9	Ebro	25	C

Question 7 [5 +10 = 15 Marks]

a. Carefully understand the HTML and CSS code and draw the output

HTML :

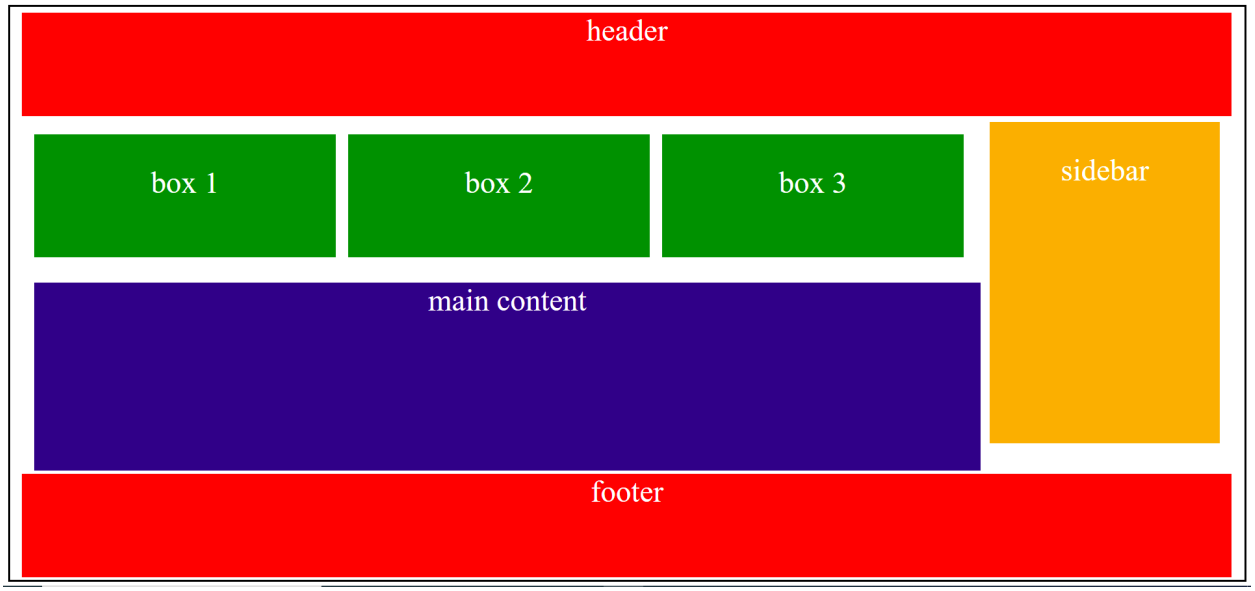
```
<html>
<head>
    <link href="./mycss.css" rel="stylesheet">
</head>
<body style="border-style: solid;">
    <div id="main_div">
        <div class="header_footer_div"><p>header</p></div>
        <div id="center_div">
            <div id="center_left_div">
                <div  id="center_left_div_boxs">
                    <div class="box_divs"><p>box 1</p></div>
                    <div class="box_divs"><p>box 2</p></div>
                    <div class="box_divs"><p>box 3</p></div>
                </div>
                <div  id="center_left_div_main_content"><p>main content</p></div>
            </div>
            <div id="center_right_div"><p>sidebar</p></div>
        </div>
        <div class="header_footer_div"><p>footer</p></div>
    </div>
</body>
```

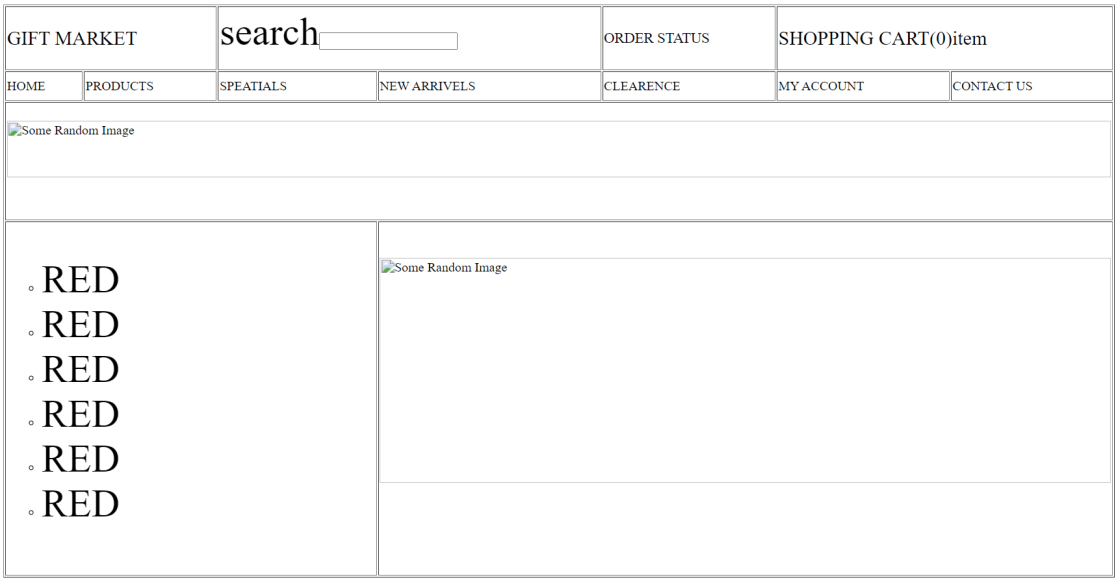
CSS:

```
#main_div
{
    height: 95%;
    width: 99%;
    margin: 10px 10px 10px 10px;
}
.header_footer_div
{
    height: 19%;
    width: 99%;
    background-color: red;
    margin: 10px 10px 10px 10px;
}
#center_div
{
    height: 59%;
    width: 99%;
    margin: 10px 10px 10px 10px;
}
#center_left_div
{
    height: 99%;
    width: 79%;
    float: left;
    margin: 10px 10px 10px 10px;
}
#center_right_div
{
    height: 100%;
    width: 19%;
    float: left;
    background-color:orange;
}
```

```
#center_left_div_boxs
{
    height: 39%;
    width: 99%;
}
#center_left_div_main_content
{
    height: 59%;
    width: 99%;
    background-color: navy;
    margin: 10px 10px 10px 10px;
}
.box_divs
{
    height: 99%;
    width: 31.9%;
    background-color: green;
    float:left;
    margin: 10px 10px 10px 10px;
}
```

Solution:



b. Carefully understand the HTML code and draw the output

Solution