MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Pre University Test (PUT) : Odd Semester 2023-24

Solution

Section – A # 20 Marks (Short Answer Type Questions)

Attempt **ALL** the questions. Each Question is of 2 marks (10 x 2 = 20 marks)

Q.1

a) (CO-1): What is semantic HTML? (K1)

Sol:-

Semantic HTML (also called semantic markup) is HTML code that uses HTML tags to effectively describe the purpose of page elements. Semantic HTML code communicates the meaning of its elements to both computers and humans, which helps web browsers, search engines, assistive technologies, and human developers understand the components of a web page.

The key to well-written semantic HTML is the use of semantic tags. Semantic HTML tags have names that tell the person or machine reading the code what exactly they're meant to do.

Here's a basic example: The (paragraph) tag is a semantic HTML tag — all content between its opening tag and closing tag is a block of paragraph of text. Anyone or any device reading this tag will understand its purpose.

Some other common semantic HTML tags are:

- <h1>, <h2>, <h3>, etc.: Headings on the page in descending order of importance.
- <a>: A hyperlink.
- <button>: A button element.
- and <emphasis>: These elements signal that the text inside them is important.
- and <ul>: Ordered and unordered lists, respectively
- <header> and <footer>: Denote the header and footer sections of a web page.

b) (CO-1): Explain HTML comments with example. (K2)

Sol:-

The comment tag is used to insert comments in the source code. Comments are not displayed in the browsers. You can use comments to explain your code, which can help you when you edit the source code at a later date. This is especially useful if you have a lot of code..

Example:

<!-- I am a comment! -->

Comments in HTML start with <!-- and end with -->.

Don't forget the exclamation mark at the start of the tag! But you don't need to add it at the end.

The tag surrounds any text or other HTML tag you want to comment out.

c) (CO-2): What do you understand by the Hyperlinks in HTML? (K1)

Sol: -

A hyperlink can be thought of as an interface that links a source to a target. Clicking the hyperlink at the source will navigate to the target. Hyperlinks can assume any of the following appearances:

- Text
- Images
- URLs
- Controls (for example, a button)

Anchor text is a type of hyperlink represented by plain text. Anchor text is very important in SEO (search engine optimization).

d) (CO-2): What are the entities in HTML? (K1)

Sol:-

HTML character entities are used as a replacement of reserved characters in HTML. You can also replace characters that are not present on your keyboard by entities.

These characters are replaced because some characters are reserved in HTML. HTML entities provide a wide range of characters which can allow you to add icons, geometric shapes, mathematical operators, etc.

For example: if you use less than (<) or greater than (>) symbols in your text, the browser can mix them with tags that's why character entities are used in HTML to display reserved characters.

You can use an entity in your HTML document by name or by a numerical character reference. Each entity starts with symbol ampersand (&) and ends with a semicolon (;).

e) (CO-3): Write the syntax of CSS property that can be used to remove the underline from a hyperlink. (K2)

Sol:-

```
a:link {
  text-decoration: none;
}
a:visited {
  text-decoration: none;
}
a:hover {
  text-decoration: none;
}
a:active {
  text-decoration: none;
}
```

f) (CO-3): In CSS when you will use CSS float? (K2)

Sol:-

The float property is used for positioning and formatting content e.g. let an image float left to the text in a container. The float property can have one of the following values: left - The element floats to the left of its container.

g) (CO-4): Discuss briefly about the concept of Client Side Scripting. (K2)
Sol:-
Client-side scripting simply means running scripts, such as JavaScript, on the client device, usually within a browser. All kinds of scripts can run on the client side if they are written in JavaScript, because JavaScript is universally supported.

h) (CO-4): Describe the use of typeof operator in JavaScript. (K2)
Sol:
Typeof in JavaScript is an operator used for type checking and returns the data type of the operand passed to it. The operand can be any variable, function, or object whose type you want to find out using the typeof operator.

i) (CO-5): Define Control Panel and name most used panels. (K2)
Sol:
Your website control panel helps you manage almost anything you would need to configure on your web server and allows you to do it with one easy interface. Control panels will manage web server functions including: DNS Management. IP Address Management. SSL Certificates and Bindings.
Most used panels are:
1. hPanel
2. Plesk
3. cPanel
4. DirectAdmin
5. Webmin
6. ispmanager

j) (CO-5): Define FTP Client. (K2)
Sol:-
An FTP client is an application on your computer that connects you to remote servers through FTP and other protocols. An FTP client provides an environment in which you can upload files to a server, download files from a server to your device, and view and manage files stored on your web server.

Section – B # 30 Marks (Long / Medium Answer Type Questions)

Attempt **ALL** the questions. Each Question is of 6 marks (5 x 6 = 30 marks)

Q.2 (CO-1): Explain the various protocol governing web projects.

Sol:-

Protocols Governing Web:

The Defense Advance Research Projects Agency (DARPA) originally developed Transmission Control Protocol/Internet Protocol (TCP/IP) to interconnect various defense department computer networks. The Internet, an international Wide Area Network, uses TCP/IP to connect government and educational institutions across the world. TCP/IP is also in widespread use on commercial and private networks. The TCP/IP suite includes the following protocols.

1. Data Link Layer:-

1. **ARP/RARP:-** TCP/IP uses the Address Resolution Protocol (ARP) and the Reverse Address Resolution Protocol (RARP) to initialize the use of Internet addressing on an Ethernet or other network that uses its own media access control (MAC). ARP allows a host to communicate with other hosts when only the Internet address of its neighbors is known.

2. Network Layer:-

1. **DHCP:** – The Dynamic Host Configuration Protocol (DHCP) provides Internet hosts with configuration parameters. DHCP is an extension of BOOTP. DHCP consists of two components: a protocol for delivering host-specific configuration parameters from a DHCP server to a host and a mechanism for allocation of network addresses to hosts.

2. **ICMP/ICMPv6:-** The Internet Control Message Protocol (ICMP) was revised during the definition of IPv6. In addition, the multicast control functions of the IPv4 Group Membership Protocol (IGMP) are now incorporated with the ICMPv6.

3. **IGMP:** – The Internet Group Management Protocol (IGMP) is used by IP hosts to report their host group memberships to any immediately neighboring multicast routers.

4. **IP:** – The Internet Protocol (IP), is the routing layer datagram service of the TCP/IP suite. All other protocols within the TCP/IP suite, except ARP and RARP, use IP to route frames from host to host

3. Transport Layer:-

1. **TCP:** – IETF RFC793 defines the Transmission Control Protocol (TCP). TCP provides a reliable stream delivery and virtual connection service to applications through the use of sequenced acknowledgment with retransmission of packets when necessary.

2. **UDP:–** The User Datagram Protocol (UDP), defined by IETF RFC768, provides a simple, but unreliable message service for transaction-oriented services. Each UDP header carries both a source port identifier and destination port identifier, allowing high-level protocols to target specific applications and services among hosts.

4. Application Layer:-

1. **FTP:-** The File Transfer Protocol (FTP) provides the basic elements of file sharing between hosts. FTP uses TCP to create a virtual connection for control information and then creates a separate TCP connection for data transfers. The control connection uses an image of the TELNET protocol to exchange commands and messages between hosts.

2. **HTTP:-** HTTP, or Hypertext Transfer Protocol, is the foundation of data communication on the World Wide Web. It establishes the rules for how web browsers and servers interact, facilitating the exchange of information. Following a client-server model, a web browser initiates communication by sending an HTTP request to a server, specifying the desired action (GET, POST, etc.) and the target resource's URL. The server processes the request and responds with an HTTP response, containing the requested data or an error code. HTTP is a stateless protocol, treating each interaction independently, and it relies on various methods, status codes, headers, and URLs to define the nature of communication. With its simplicity and versatility, HTTP has evolved through different versions, each improving on the previous to meet the changing needs of web communication. Additionally, the adoption of HTTPS enhances security by encrypting the data exchanged between clients and servers, ensuring a more secure and private online experience.

OR

Explain in detail about Web Standards and W3C recommendations.
Sol:-
W3C stands for World Wide Web Consortium.
It is basically the main international establishment for the WWW(World Wide Web). The main motive behind the World Wide Web Consortium is to lead the web to its full potential and to ensure regular development of the web. It serves the purpose of developing various protocols in order to ensure the growth of the web. It consists of organizations that provide full time working for staff in order to ensure the development of the web. Currently, the W3C is being led by Tim Berners-Lee and has a staff of 443 members. The main headquarters of W3C is located in Cambridge, Massachusetts, United States.
History
World Wide Web Consortium was founded by Tim Berners-Lee in October 1994 at the Massachusetts Institute of Technology, with the support of DARPA(Defense Advanced Research Projects Agency) and CERN. The main vision of W3C was to standardize the technologies as well as the protocols that are used to build the web. It also tried to encourage the organizations to adopt the new standards defined by the World Wide Web Consortium. In the next few years, the W3C thus published various recommendations such as the format of PNG images, CSS(versions 1 and 2), etc. European branch of W3C was first considered to be hosted by CERN but later it did not happen as CERN focused on physics rather than Information Technology. So the French Institute for Research in Computer Science and Automation hosted the European branch of W3C in April 1995. Further various other hosts were decided

such as Beihang University being the Chinese host, Keio University being the Asian host, etc.

Characteristics of W3C

- It is responsible for creating and publishing web standards.
- It also ensures the growth and development of web.
- It also develops the standards for web scripting, web applications and other dynamic contents.
- It is an organization which helps in the promotion of interoperability by the promotion and designing of open protocols.
- W3C uses the principles of modularity, simplicity and extensibility while designing web protocols.

Advantages

- W3C enables the easier maintenance of the W3C validated websites.
- It provides a consistent and defined look for all the W3C validated websites.
- It standardizes the validated websites so that they are accessible to different devices.
- It enables faster browser interaction.

Disadvantages

- W3C validation is a timely process and thus the time for full validation depends on the website code.
- W3C validation exercises have costs associated with them.
- Sometimes translation issues arise in W3C validation of websites.

Q3. (CO-2): Explain the different tags and attributes used in designing of HTML table.

Sol:-

HTML Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

We can create a table to display data in tabular form, using <table> element, with the help of <tr> , <td>, and <th> elements.

In Each table, table row is defined by <tr> tag, table header is defined by <th>, and table data is defined by <td> tags.

HTML tables are used to manage the layout of the page e.g. header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page .

HTML Table Tags

Tag	**Description**
<table>	It defines a table.
<tr>	It defines a row in a table.
<th>	It defines a header cell in a table.
<td>	It defines a cell in a table.
<caption>	It defines the table caption.
<colgroup>	It specifies a group of one or more columns in a table for formatting.
<col>	It is used with <colgroup> element to specify column properties for each column.
<tbody>	It is used to group the body content in a table.
<thead>	It is used to group the header content in a table.

<tfooter> It is used to group the footer content in a table.

HTML Table Example

Let's see the example of HTML table tag. It output is shown above.

```
<table>
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>
<tr><td>James</td><td>William</td><td>80</td></tr>
<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>
<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>
</table>
```

OR

Write a HTML program to design the following table .

Electronics Item	Grocery	
Mobile Phones	Laptops	Furniture
Renew Items (Background Color yellow)		Go to next Page (Link)

Sol:-

```
<table>
<thead>
  <tr>
    <th>Electronics Items</th>
    <th colspan="2">Grocery</th>
  </tr>
</thead>
<tbody>
  <tr>
    <td>Mobile Phones</td>
    <td>Laptops</td>
    <td>Furnitures</td>
  </tr>
  <tr>
    <td colspan="2">Renew Items(Background color yellow)</td>
    <td>Go to next page (link)</td>
  </tr>
</tbody>
</table>
```

Q.4 (CO-3): List all the properties of margin, padding, outline and border.

Sol:-

1. Margin: It controls the space outside of an element. You can set the margin on all sides (top, right, bottom, left) or individually.
a. margin-top: Sets the margin on the top side of an element.
b. margin-right: Sets the margin on the right side of an element.
c. margin-bottom: Sets the margin on the bottom side of an element.
d. margin-left: Sets the margin on the left side of an element.
e. margin: Sets the margin on all sides of an element in a shorthand format. You can specify the margin values in clockwise order: top, right, bottom, left.

2. Padding: It controls the space inside of an element. You can set the padding on all sides (top, right, bottom, left) or individually.
a. padding-top: Sets the padding on the top side of an element.
b. padding-right: Sets the padding on the right side of an element.
c. padding-bottom: Sets the padding on the bottom side of an element.
d. padding-left: Sets the padding on the left side of an element.
e. padding: Sets the padding on all sides of an element in a shorthand format. You can specify the padding values in clockwise order: top, right, bottom, left.

3. Outline: It is similar to a border, but it's drawn outside the element's dimensions. You can set the outline color, style, and width.
a. outline-color: Sets the color of the outline.
b. outline-style: Sets the style of the outline, such as solid, dashed, dotted, etc.
c. outline-width: Sets the width of the outline.
d. outline-offset: Sets the distance between the outline and the element's border.

4. Border: It creates a line around an element. You can set the border color, style, and width. There are different border styles like solid, dashed, dotted, etc.
a. border-color: Sets the color of the border.
b. border-style: Sets the style of the border, such as solid, dashed, dotted, etc.
c. border-width: Sets the width of the border.
d. border-radius: Sets the radius of the border corners, creating rounded corners.
e. border: Sets all the border properties in a shorthand format. You can specify the border values in the following order: width, style, color.

OR

Design a web page that displays a registration form for a student who is going to participate in an international seminar and apply appropriate CSS styles to make that form more attractive.
Sol:-
html

```
<!DOCTYPE html>
<html>
<head>
  <title>Student Registration</title>
  <link rel="stylesheet" type="text/css" href="styles.css">
</head>
<body>
  <h1>Student Registration</h1>
```

```
  <form>
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required>
    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>
    <label for="university">University:</label>

   <input type="text" id="university" name="university" required>
    <label for="country">Country:</label>
    <input type="text" id="country" name="country" required>
    <label for="seminar">Seminar:</label>
    <select id="seminar" name="seminar" required>
      <option value="">Select Seminar</option>
      <option value="seminar1">Seminar 1</option>
      <option value="seminar2">Seminar 2</option>
      <option value="seminar3">Seminar 3</option>
    </select>
    <input type="submit" value="Register">
  </form>
</body>
</html>
```

To make the form more attractive, we can apply CSS styles in a separate file called `styles.css`. Here's an example of how you can style the form:

css

```
body {
  font-family: Arial, sans-serif;
  background-color: #f1f1f1;
  padding: 20px;
}

h1 {
  text-align: center;
  color: #333;
}

form {
  background-color: #fff;
  padding: 20px;
  border-radius: 5px;
}

label {
  display: block;
  margin-bottom: 10px;
  font-weight: bold;
  color: #333;
}
```

Q.5 (CO-4): Explain Java Script in Real time. Write a program in JavaScript with two text boxes, one for input and another for output, print first n terms of Fibonacci series (0, 1, 1, 2, 3, 5, 8, 13, 21, 34…) in output box on clicking of button 'print'. Input n is given in input box.

Sol:-

JavaScript is a programming language commonly used for web development. It allows you to add interactivity and dynamic behavior to websites. In real-time, JavaScript can respond to user actions and update the webpage without needing to reload the entire page.

JavaScript program that prints the first n terms of the Fibonacci series.:

html

```
<!DOCTYPE html>
<html>
<head>
  <title>Fibonacci Series</title>
  <script>
    function printFibonacci() {
      var n = parseInt(document.getElementById("input").value);
      var output = document.getElementById("output");
      var fib = [0, 1];
      for (var i = 2; i < n; i++) {
        fib[i] = fib[i - 1] + fib[i - 2];
      }
      output.value = fib.join(", ");
    }
  </script>
</head>
<body>
  <h1>Fibonacci Series</h1>

  <label for="input">Enter the value of n:</label>
  <input type="number" id="input">

  <button onclick="printFibonacci()">Print</button>

  <label for="output">Output:</label>
  <textarea id="output" rows="5" readonly></textarea>
</body>
</html>
```

In this program, we have two text boxes: one for input and another for output. The user enters the value of n in the input box. When the "Print" button is clicked, the `printFibonacci()` function is called. It calculates the Fibonacci series up to the given value of n and displays the result in the output box.

OR

Illustrate Array in JavaScript. Create a program in JavaScript to implement an array of five elements and p erform the operations-push, pop, shift, unshift and join on the array.

Sol:-

In JavaScript, an array is a data structure that allows you to store multiple values in a single variable. Each value in an array is called an element, and they are indexed starting from 0.

Program that implements an array of five elements and performs some common operations on it:

```
// Create an array with five elements
var myArray = [10, 20, 30, 40, 50];
// Push an element to the end of the array
myArray.push(60);
// Pop the last element from the array
var poppedElement = myArray.pop();
// Remove the first element from the array
var shiftedElement = myArray.shift();
// Add an element to the beginning of the array
myArray.unshift(5);
// Join all the elements of the array into a string
var joinedString = myArray.join(', ');
// Print the array and the results
console.log(myArray);
console.log(poppedElement);
console.log(shiftedElement);
console.log(joinedString);
```

In this program, we start with an array `[10, 20, 30, 40, 50]`. We then use the following operations:

- `push(60)`: Adds the element `60` to the end of the array.
- `pop()`: Removes and returns the last element from the array (`60` in this case).
- `shift()`: Removes and returns the first element from the array (`10` in this case).
- `unshift(5)`: Adds the element `5` to the beginning of the array.
- `join(', ')`: Joins all the elements of the array into a string, separated by commas and spaces.

The program then prints the modified array, the popped element, the shifted element, and the joined string.

Q.6 (CO-5): Illustrate DNS and its working. Explain domain name registration process in detail.

Sol:-

DNS stands for Domain Name System. It is a system that translates human-readable domain names, like "example.com", into IP addresses, which are the unique numerical addresses that computers use to identify each other on the internet.

The working of DNS involves several components and steps:

1. Domain Name Resolution: When you enter a domain name in your web browser, it sends a request to a DNS resolver (usually provided by your internet service provider or a public DNS server). The resolver then starts the process of resolving the domain name.

2. Recursive Query: The resolver first checks if it has the IP address for the requested domain name in its cache. If it doesn't, it sends a recursive query to the root DNS servers.
3. Root DNS Servers: The root DNS servers are the starting point of the DNS hierarchy. They maintain a list of authoritative DNS servers for each top-level domain (TLD), such as ".com" or ".org". The root DNS servers respond to the resolver with the IP address of the authoritative DNS server for the TLD.
4. TLD DNS Servers: The resolver then sends another query to the TLD DNS server, asking for the IP address of the authoritative DNS server for the next level of the domain name.
5. Authoritative DNS Servers: The resolver finally sends a query to the authoritative DNS server for the specific domain name. This server has the IP address for the domain name and responds to the resolver with the corresponding IP address.
6. Response to the Client: The resolver receives the IP address from the authoritative DNS server and sends it back to the client's web browser. The browser can then establish a connection to the web server using the IP address.
Domain name registration process:
1. Choose a Registrar: First, you need to choose a domain name registrar, which is a company that provides domain name registration services. There are many registrars available, and they offer different prices and features.
2. Check Domain Availability: Use the registrar's search tool to check if the domain name you want is available. If it's available, you can proceed with the registration process. If it's already registered by someone else, you'll need to choose a different domain name.
3. Provide Information: During the registration process, you'll need to provide your contact information, including your name, address, email, and phone number. This information is used for the domain registration record and is publicly accessible.
4. Choose Registration Period: You'll need to select the registration period

OR

Explain the use of domain name and hosting. Write about the different types of hosting.
Sol:-
A domain name is like the address of your website on the internet. It's the unique name that people type into their web browsers to access your website. For example, "example.com" is a domain name. Domain names are important because they help users easily identify and remember websites.
Hosting, on the other hand, refers to the service that allows your website to be accessible on the internet. When you host your website, you are essentially renting space on a server where all your website files, data, and content are stored. This server is connected to the internet and ensures that your website is available for visitors to access.
There are different types of hosting available, depending on your website's needs:
1. Shared Hosting: This is a popular and affordable option for small websites. With shared hosting, multiple websites are hosted on the same server. It's called "shared" because you share server resources (like CPU, memory, and disk space) with other websites. While it's cost-effective, shared hosting may have limitations in terms of performance and customization.

2. Virtual Private Server (VPS) Hosting: VPS hosting offers more control and resources compared to shared hosting. It involves dividing a physical server into multiple virtual servers, each with its own dedicated resources. This means you have more control over your server environment and can customize it according to your needs.
3. Dedicated Server Hosting: With dedicated server hosting, you have an entire physical server dedicated solely to your website. This provides the highest level of control, flexibility, and resources. Dedicated hosting is recommended for large websites with high traffic and resource-intensive applications.
4. Cloud Hosting: Cloud hosting utilizes multiple servers working together to host your website. It offers scalability and flexibility, as resources can be easily scaled up or down based on your website's needs. Cloud hosting is reliable and can handle high traffic volumes effectively.
5. Managed WordPress Hosting: This type of hosting is specifically optimized for WordPress websites. It offers features like automatic updates, enhanced security, and specialized support for WordPress-related issues.
Each type of hosting has its own advantages and considerations, so it's important to choose the one that best suits your website's requirements and budget.

Section – C # 50 Marks (Medium / Long Answer Type Questions)

Attempt **ALL** the questions. Each Question is of 10 marks.

Q.7 (CO-1): Attempt any ONE question. Each question is of 10 marks.

a. Express the various principles to be considered while developing a website.

Sol:-

1. Have a Purpose and Plan

A user needs a reason to visit an application and that’s why your website should clearly explain or convey the services or products you are offering to the users. Your website and each page of it should have a purpose and clear specification that what it does. According to the goal (entertainment website, e-commerce site, social media, etc.) of your website make a rough sketch and identify all crucial elements (like navigation, contact information, call to action, search, footer, buttons, images, layouts) that you need to include on your website.

2. Simplicity

Complexity is scary and in web designing less-is-more approach work more effectively. Make your website simple and try to display one detail at a time for getting the individual attention of each part. Most people put everything on the same page whatever they want on their website, which makes the screen cluttered and users get distracted and confused. Here are some tips to keep in mind for designing a clean and simple website.

3. Readability

Users should not face difficulty in reading the text on your website so you need to pay attention to the contrast between your text and its background. A lot of people use a background image with text over it where the image doesn't have any overlay and the text gets blended with the image. You should use some dark overlay over the image and then the text over that to make your content readable.

4. Responsiveness

People use mobile devices for most of their browsing and 50% of web traffic comes from mobile devices. These all are the reasons that your application should be viewable on different devices. Text, layout, images all the elements of your website should be viewable and accessible on different devices for better user experience. Learn to use CSS grid, media queries, bootstrap frameworks to make your application responsive or mobile-friendly.

5. Simple Navigation

Visitors will definitely move away from your website if they won't be able to find out the things they are looking for and that's the reason paying attention to the navigation of your website is extremely important. Navigation organizes your complete website and guides a user to move around your application. The navigation menu should be on the top and sticky on your website so if a user scrolls down the webpage they can still find and access the menu on your website. Below are some tips to make easy to navigate application.

6. Call To Action

It's very important in your website to have a clear call to action button or form that indicates the next step or action user should take on a page to accomplish the task. For example, buy now, sign up, contact form, subscription, registration form, social media button, etc. CTA provides some sort of direction to the user once he/she knows the purpose of the website. Without CTA user won't be able to find that whether he/she needs to purchase a product, do some kind of registration or take a subscription and the user may leave the website without completing the final task. It's good if you keep your CTA above the fold so the visitor can find it right in front of them.

7. Load Speed

People are very impatient and they are not going to wait for too long if your website speed is slow. Most of the user moves away from the website within just 5 seconds if they id doesn't load fast. Size of images or videos makes a big impact on website speed so try to compress the image before you add it there.

Also, combine code into a central CSS or JavaScript file to reduce the HTTP requests. Minify HTML, CSS, JavaScript (compressed to speed up their load time). Limit the large items on your website and choose the right host.

8. Prioritize Scrolling

We have already mentioned that you should avoid sliders or accordions to present a lot of information on the website. The best way to present more content and fit that into your website is by using the scrollbar. It has been found in one of the studies that conversion rates increase by up to 30% when you add scrolling feature in your webpage.

9. Pick Up the Right Images

A picture says a lot about a website and choosing the right image for your website can get a lot of visitors. We highly recommend you to use high-quality optimized speed which doesn't affect your website speed. You can take the images from professionals or from photo stock that provide high-quality images with a natural look. Your image should clearly speak the type of message you want your user to understand. Adding photos of people can increase the conversion rates of your website.

10. Color Palette

The color of your website should match the brand of your website. Choosing the right color to represent your brand is very important. You also need to take care of contrast while choosing the color. When you are choosing colors for your website it should go well with each other also your text should be clear and readable. Your choice of color should not clash with each other for example don't use purple and red color next to each other, it will make your site ugly. Use a single color for the main element (primary), highlights (secondary) and other less-important elements (background).

b. Define web page. Discuss different types of websites with examples.

Sol:-

A website is a collection of interlinked web pages with a common domain name. The website can be made by any individual, group, or company. All the websites together constitute the world wide web. The website can be of several types, like an e-commerce website, social media website, or a blog website, and every website has a different role, but one thing is common that

Types of Websites

There are so many types of websites available and we cannot discuss each type, so there we discuss some basic websites in detail:

Personal Website

These websites are used for sharing your personal information. Also, you can share your philosophical thoughts and showcase your work. Many people use personal websites to brand themselves.

Photo Sharing Website

This type of website enables you to store your photographs online and share them with your family and friends. Here you can upload as much as you want, also manage it as well as share it (private or public).

Blog

A blog is a website where people share information, ideas, and views. It is a place where you can express your vision and your thoughts to the world. Earlier, blogs were used as a journal, but now they are becoming one of the important mass communication tools where people get to know about new things. WordPress and Google blogger are famous blogging sites where you can write articles. Blogs include a travel blog, news blog, cooking blog, etc.

Informational website

The term itself gives us the idea. This website provides information on various topics. We very often get confused about many things and searching for them in a book is very time-taking. These websites save our lives, as we get information about everything. For example, Wikipedia is an information website where you can get information about everything related to history, geography, science and technology, cinema, famous people, etc.

E-commerce website

This website is a place for online shopping where a person can buy or sell a product. Amazon, Flipkart, and Olx are some of the examples of an E-commerce website. E-commerce has a lot of potentials to grow as nowadays, people tend to shop online because of their hectic life.

Social Media website

This is the most popular website where people can connect with each other. Social media websites enable the user to share their personal information,

pictures, video ideas, and opinion in real-time. Facebook, Instagram, and Twitter are some examples of social media websites.

Educational Websites

Education websites include websites of colleges and schools and tuitions. The new normal has changed the structure of educational institutions. Nowadays, people are learning through online classes and the demands of educational websites also grow. As people want to learn more than their college and schools.

Portfolio Websites

These websites are used to showcase your best work to a professional. It is a more personal website where creative people add their creativity to showcase their industry. A portfolio website is a majorly creative one. For example, I am a writer and I want a job in digital content writing. Then I can make a portfolio website where I can showcase my different type of writing style on the website.

Q.8 (CO-2): Attempt any ONE question. Each question is of 10 marks.

a. Discuss in detail about the following.

i) Working and types of Lists in HTML using an example.

Sol:-

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)
3. Description List or Definition List (dl)

HTML Ordered List or Numbered List

In the ordered HTML lists, all the list items are marked with numbers by default. It is known as numbered list also. The ordered list starts with <ol> tag and the list items start with <li> tag.

```
<ol>
 <li>Aries</li>
 <li>Bingo</li>
 <li>Leo</li>
 <li>Oracle</li>
</ol>
```

HTML Unordered List or Bulleted List

In HTML Unordered list, all the list items are marked with bullets. It is also known as bulleted list also. The Unordered list starts with <ul> tag and list items start with the <li> tag.

```
<ul>
 <li>Aries</li>
 <li>Bingo</li>
 <li>Leo</li>
 <li>Oracle</li>
</ul>
```

HTML Description List or Definition List

HTML Description list is also a list style which is supported by HTML and XHTML. It is also known as definition list where entries are listed like a dictionary or encyclopedia.

The definition list is very appropriate when you want to present glossary, list of terms or other name-value list.

The HTML definition list contains following three tags:

<dl> tag defines the start of the list.

<dt> tag defines a term.

<dd> tag defines the term definition (description).

```
<dl>
  <dt>Aries</dt>
  <dd>-One of the 12 horoscope sign.</dd>
  <dt>Bingo</dt>
  <dd>-One of my evening snacks</dd>
 <dt>Leo</dt>
 <dd>-It is also an one of the 12 horoscope sign.</dd>
  <dt>Oracle</dt>
  <dd>-It is a multinational technology corporation.</dd>
</dl>
```

HTML Nested List

A list within another list is termed as nested list. If you want a bullet list inside a numbered list then such type of list will called as nested list.

Code:

```
<!DOCTYPE html>
<html>
<head>
   <title>Nested list</title>
</head>
<body>
   <p>List of Indian States with thier capital</p>
<ol>
   <li>Delhi
```

```
        <ul>
          <li>NewDelhi</li>
        </ul>
      </li>
      <li>Haryana
        <ul>
          <li>Chandigarh</li>
        </ul>
      </li>
      <li>Gujarat
        <ul>
          <li>Gandhinagar</li>
        </ul>
      </li>
      <li>Rajasthan
        <ul>
          <li>Jaipur</li>
        </ul>
      </li>
      <li>Maharashtra
        <ul>
          <li>Mumbai</li>
        </ul>
      </li>
      <li>Uttarpradesh
        <ul>
          <li>Lucknow</li></ul>
      </li>
    </ol>
    </body>
    </html>
```

ii) Frameset in HTML using an example.

Sol:-

The <frameset> tag in HTML is used to define the frameset. The <frameset> element contains one or more frame elements. It is used to specify the number of rows and columns in frameset with their pixel of spaces. Each element can hold a separate document.

Note: The <frameset> tag is not supported in HTML5.

Syntax:

<frameset cols = "pixels|%|*">

- **Attributes:** The list of frameset attributes are given below:
- **cols:** The cols attribute is used to create vertical frames in a web browser. This attribute is basically used to define the no. of columns and their size inside the frameset tag.
- **rows:** The rows attribute is used to create horizontal frames in the web browser. This attribute is used to define the no. of rows and their size inside the frameset tag.
- **border:** This attribute of frameset tag defines the width of the border of each frame in pixels. Zero value is used for no border.
- **frameborder:** This attribute of frameset tag is used to specify whether a three-dimensional border should be displayed between the frames or not for this use two values 0 and 1, where 0 defines no border and value 1 signifies for yes there will be a border.
- **framespacing:** This attribute of frameset tag is used to specify the amount of spacing between the frames in a frameset. This can take any integer value as a parameter which basically denotes the value in pixel.

```
<!DOCTYPE html>
<html>
    <head>
        <title>frameset attribute</title>
    </head>
    <!-- frameset attribute starts here -->
    <frameset rows = "20%, 60%, 20%">
        <frame name = "top" src = "attr1.png" />
        <frame name = "main" src = "gradient3.png" />
        <frame name = "bottom" src = "col_last.png" />
        <noframes>
            <body>The browser you are working does not
            support frames.</body>
        </noframes>
    </frameset>
    <!-- frameset attribute ends here -->
</html>
```

b. Explain the following.

i) **Responsive Web Designing using an example**

Sol:-

Responsive web design is about creating web pages that look good on all devices!

A responsive web design will automatically adjust for different screen sizes and viewports.

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):

Example

<meta name="viewport" content="width=device-width, initial-scale=1.0">

This will set the viewport of your page, which will give the browser instructions on how to control the page's dimensions and scaling.

Responsive Images

Responsive images are images that scale nicely to fit any browser size.

Using the width Property

If the CSS width property is set to 100%, the image will be responsive and scale up and down:

Responsive Text Size

The text size can be set with a "vw" unit, which means the "viewport width".

That way the text size will follow the size of the browser window:

ii) **Markup Tags and Line break using separate examples**

Sol:-

HTML

Identifies the file as containing HTML-coded information and is used in association with the file extension .html (.htm where the extension length is restricted).

HEAD

Identifies the first part of the document containing the title.

The title is shown as part of your browser's window (see below).

TITLE

The title element contains your document title and identifies its content in a global context. The title is typically displayed in the title bar at the top of the browser window, but not inside the window itself. The title is also what is displayed on someone's hotlist or bookmark list, so choose something

descriptive, unique, and relatively short. A title is also used to identify your page for search engines.

It is good practice to restrict titles to 64 characters.

BODY

The body is the main section of the HTML document following after the heading, and contains the publishable content of the document.

Background Color

By default text is displayed in black on a gray background, but these settings can be changed. The color of text, links, visited links, and active links can be chbanged using the following attributes:

Headings

HTML has six levels of headings, starting with '1' for the most significant and working down to '6'. The associated text is highlighted by the Browser to stand out against the normal body text. The syntax of the heading element is:

Paragraphs

When HTML documents are rendered for presentation, carriage returns are ignored and the text that they separate continues as if a single space is present. In addition, contiguous whitespace (spaces, linefeeds, and carriage returns) is compressed into a single space when the document is displayed. It is always the tags that dictate the layout of the document and not the text itself. The browser will determine where best to wrap text to make best use of the space available on the screen (or printed page).

Line Breaks

The
 tag forces a line break, avoiding additional space between the lines, eg. as required by postal addresses. An example of its use is:

Line 1
Line 2
Line 3

for example:

<html>

<head>

<title>

Example of BR tag

</title>

</head>

<body>

If you want to break a line
 in a paragraph,
 use the BR element in
 your HTML document.

</body>

</html>

Q.9 (CO-3): Attempt any ONE question. Each question is of 10 marks.

a. Explain in detail about Creating page Layout and Site Designs in Cascade Style Sheet (CSS).

Sol:-

CSS was developed by W3C (World Wide Web Consortium) in 1996 for a rather simple reason. HTML element was not designed to have tags that would help format the page. You were only supposed to write the markup for the web page.

Tags like <font> were introduced in HTML version 3.2, and it caused quite a lot of trouble for web developers. Due to the fact that web pages have different fonts, colored backgrounds, and multiple styles, it was a long, painful, and expensive process to rewrite the code. Thus, CSS was created by W3C to solve this problem.

CSS stands for Cascading Style Sheets language and is used to stylize elements written in a markup language such as HTML. It separates the content from the visual representation of the site. The relation between HTML and CSS is strongly tied together since HTML is the very foundation of a site and CSS is all of the aesthetics of an entire website.

The difference between a web page that implements CSS and one that doesn't is massive and surely noticeable.

You might have seen a website that fails to load completely and has a white background color with most of the text being blue and black. This means that the CSS part of the web page didn't load correctly or it doesn't exist altogether.

Before using CSS, all of the stylizing had to be included into the HTML markup. This means web developers had to separately describe the background color, font size, alignments, etc.

CSS lets you stylize everything on a different file, thus creating the design there and later on integrating the CSS files on top of the HTML markup. This makes the actual HTML markup much cleaner and easier to maintain.

In short, with CSS features you don't need to repeatedly describe how individual elements look. This saves time, shortens the code, and makes it not as prone to errors.

CSS uses a simple English based syntax with a set of rules that govern it. Like we've mentioned before, HTML was never intended to use style elements, only the markup of the page. It was created to merely describe the content. For example: This is a paragraph. .

But how do you style the paragraph? The CSS syntax structure is pretty simple. It has a selector and a declaration block. You select an element and then declare what you want to do with it. Pretty straightforward, right.

b. Construct a web page using CSS to show the 3 horizontal and 3 vertical navigation bars that links to the different web pages.

Sol:-

```
<body>
 <div class="horizontallinks">
  <ul>
   <li> link1 </li>
   <li>link 2</li>
   <li>link 3</li>
   <li>
    <link 4</div>
```

```
        <div class="verticallinks">
          <ui>
            <li>link a </li>
            <li> link b</li>
            <li> link c </li>
        </div>
    </ul>
</body>
```

css:

```
.horizontallinks {
  position: fixed;
  list-style-type: none;
  margin-top: 70px;
  margin-left: 300px;
  padding: 0;
  font-size: 18px;
  overflow: hidden;
  background-color: white;
  display: block;
  color: black;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}
```

```
.verticallinks {
  position: fixed;
  list-style-type: none;
  padding: 0;
  font-size: 18px;
  margin-left: 45px;
  margin-top: 165px;
  display: block;
  color: black;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}
li {
  float: left;
}
li a {
  display: block;
  color: black;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}
```

Q.10 (CO-4): Attempt any ONE question. Each question is of 10 marks.

a. Explain the various event handlers in JavaScript with an example of each.

Sol:-

The change in the state of an object is known as an Event. In html, there are various events which represents that some activity is performed by the user or by the browser. When javascript code is included in HTML, js react over these events and allow the execution. This process of reacting over the events is called Event Handling. Thus, js handles the HTML events via Event Handlers.

For example, when a user clicks over the browser, add js code, which will execute the task to be performed on the event.

Some of the HTML events and their event handlers are:

Mouse events:

Event Performed	Event Handler	Description
click	onclick	When mouse click on an element
mouseover	onmouseover	When the cursor of the mouse comes over the element
mouseout	onmouseout	When the cursor of the mouse leaves an element
mousedown	onmousedown	When the mouse button is pressed over the element
mouseup	onmouseup	When the mouse button is released over the element
mousemove	onmousemove	When the mouse movement takes place.

Keyboard events:

Event Performed	Event Handler	Description
Keydown & Keyup	onkeydown & onkeyup	When the user press and then release the key

Form events:

Event Performed	Event Handler	Description
focus	onfocus	When the user focuses on an element
submit	onsubmit	When the user submits the form
blur	onblur	When the focus is away from a form element
change	onchange	When the user modifies or changes the value of a form element

Window/Document events:

Event Performed	Event Handler	Description
load	onload	When the browser finishes the loading of the page
unload	onunload	When the visitor leaves the current webpage, the browser unloads it
resize	onresize	When the visitor resizes the window of the browser

Let's discuss some examples over events and their handlers.

Click Event:

```
<html>
<head>Javascript Events </head>
<body>
<script language="Javascript" type="text/Javascript">
<!--
functionclickevent()
   {
document.write("This is JavaTpoint");
   }
   //-->
</script>
<form>
<input type="button" onclick="clickevent()" value="Who's this?"/>
</form>
```

```
</body>
</html>
```

MouseOver Event:

```
<html>
<head>
<h1>Javascript Events </h1>
</head>
<body>
<script language="Javascript" type="text/Javascript">
<!--
functionmouseoverevent()
   {
alert("This is JavaTpoint");
   }
   //-->
</script>
<p onmouseover="mouseoverevent()"> Keep cursor over me</p>
</body>
</html>
```

Focus Event

```
<html>
<head>Javascript Events</head>
<body>
<h2> Enter something here</h2>
<input type="text" id="input1" onfocus="focusevent()"/>
<script>
<!--
functionfocusevent()
   {
document.getElementById("input1").style.background=" aqua";
   }
//-->
</script>
</body>
</html>
```

Keydown Event:

```
<html>
<head>Javascript Events</head>
<body>
<h2> Enter something here</h2>
<input type="text" id="input1" onkeydown="keydownevent()"/>
<script>
<!--
functionkeydownevent()
   {
document.getElementById("input1");
alert("Pressed a key");
```

```
    }
//-->
</script>
</body>
</html>
```

Load event

```
<html>
<head>Javascript Events</head>
</br>
<body onload="window.alert('Page successfully loaded');">
<script>
<!--
document.write("The page is loaded successfully");
//-->
</script>
</body>
</html>
```

b. Design an educational website having four pages. First page should be as home page having information of the college, Images and Links for the other pages like contacts, Courses (Give the list of different courses) and registration form (name, father name, email id and phone number). Apply validation on all the fields (name, father name, email id and phone number).

Sol:- Below is a simple HTML template for a basic educational website with four pages: Home, Contacts, Courses, and Registration Form. It includes form validation using JavaScript.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>College Website</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            margin: 0;
            padding: 0;
            background-color: #f4f4f4;
        }

        header {
            background-color: #333;
            color: #fff;
            text-align: center;
            padding: 1em;
        }
```

```
        nav {
            background-color: #eee;
            padding: 1em;
        }

        nav a {
            margin-right: 15px;
            text-decoration: none;
            color: #333;
        }

        section {
            padding: 20px;
        }

        form {
            max-width: 400px;
            margin: auto;
        }

        label {
            display: block;
            margin-bottom: 8px;
        }

        input {
            width: 100%;
            padding: 8px;
            margin-bottom: 10px;
            box-sizing: border-box;
        }

        button {
            background-color: #333;
            color: #fff;
            padding: 10px 15px;
            border: none;
            cursor: pointer;
        }
    </style>
</head>
<body>

    <header>
        <h1>College Name</h1>
    </header>

    <nav>
        <a href="index.html">Home</a>
        <a href="contacts.html">Contacts</a>
```

```
    <a href="courses.html">Courses</a>
    <a href="registration.html">Registration</a>
</nav>

<section>
    <!-- Home Page Content -->
    <h2>Welcome to Our College!</h2>
    <p>Explore our courses and feel free to contact us for more information.</p>
    <img src="college-image.jpg" alt="College Image">
</section>

<!-- Contacts Page -->
<section id="contacts" style="display: none;">
    <h2>Contact Information</h2>
    <p>Email: info@example.com</p>
    <p>Phone: +1 123-456-7890</p>
</section>

<!-- Courses Page -->
<section id="courses" style="display: none;">
    <h2>Our Courses</h2>
    <ul>
        <li>Course 1: Subject 1</li>
        <li>Course 2: Subject 2</li>
        <li>Course 3: Subject 3</li>
        <!-- Add more courses as needed -->
    </ul>
</section>

<!-- Registration Page -->
<section id="registration" style="display: none;">
    <h2>Registration Form</h2>
    <form id="registrationForm" onsubmit="validateForm(event)">
        <label for="name">Name:</label>
        <input type="text" id="name" name="name" required>

        <label for="fatherName">Father's Name:</label>
        <input type="text" id="fatherName" name="fatherName" required>

        <label for="email">Email:</label>
        <input type="email" id="email" name="email" required>

        <label for="phone">Phone Number:</label>
        <input type="tel" id="phone" name="phone" pattern="[0-9]{10}" required>

        <button type="submit">Submit</button>
    </form>
</section>

<script>
```

```
    function validateForm(event) {
      // Basic form validation using JavaScript
      const name = document.getElementById('name').value;
      const fatherName = document.getElementById('fatherName').value;
      const email = document.getElementById('email').value;
      const phone = document.getElementById('phone').value;

      if (name === '' || fatherName === '' || email === '' || phone === '') {
        alert('All fields are required!');
        event.preventDefault(); // Prevent form submission
      } else if (!isValidPhoneNumber(phone)) {
        alert('Invalid phone number! Please enter a 10-digit number.');
        event.preventDefault();
      }
    }

    function isValidPhoneNumber(phone) {
      // Basic phone number validation (10 digits)
      const phoneRegex = /^[0-9]{10}$/;
      return phoneRegex.test(phone);
    }

    // Function to show/hide sections based on navigation
    function showSection(sectionId) {
      const sections = ['contacts', 'courses', 'registration'];

      // Hide all sections
      sections.forEach(section => {
        document.getElementById(section).style.display = 'none';
      });

      // Show the selected section
      document.getElementById(sectionId).style.display = 'block';
    }
  </script>

</body>
</html>
```

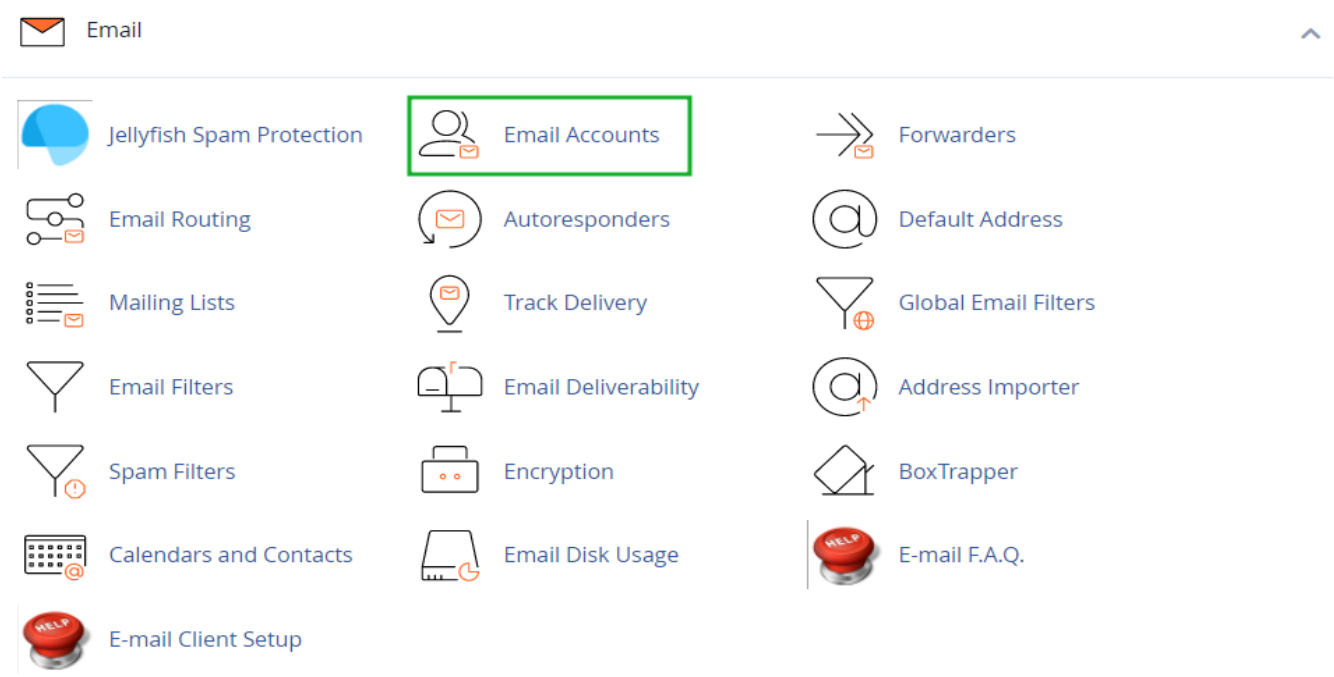
Q.11 (CO-5): Attempt any ONE question. Each question is of 10 marks.

a. i) Give a detailed explanation how to create email in cpanel.

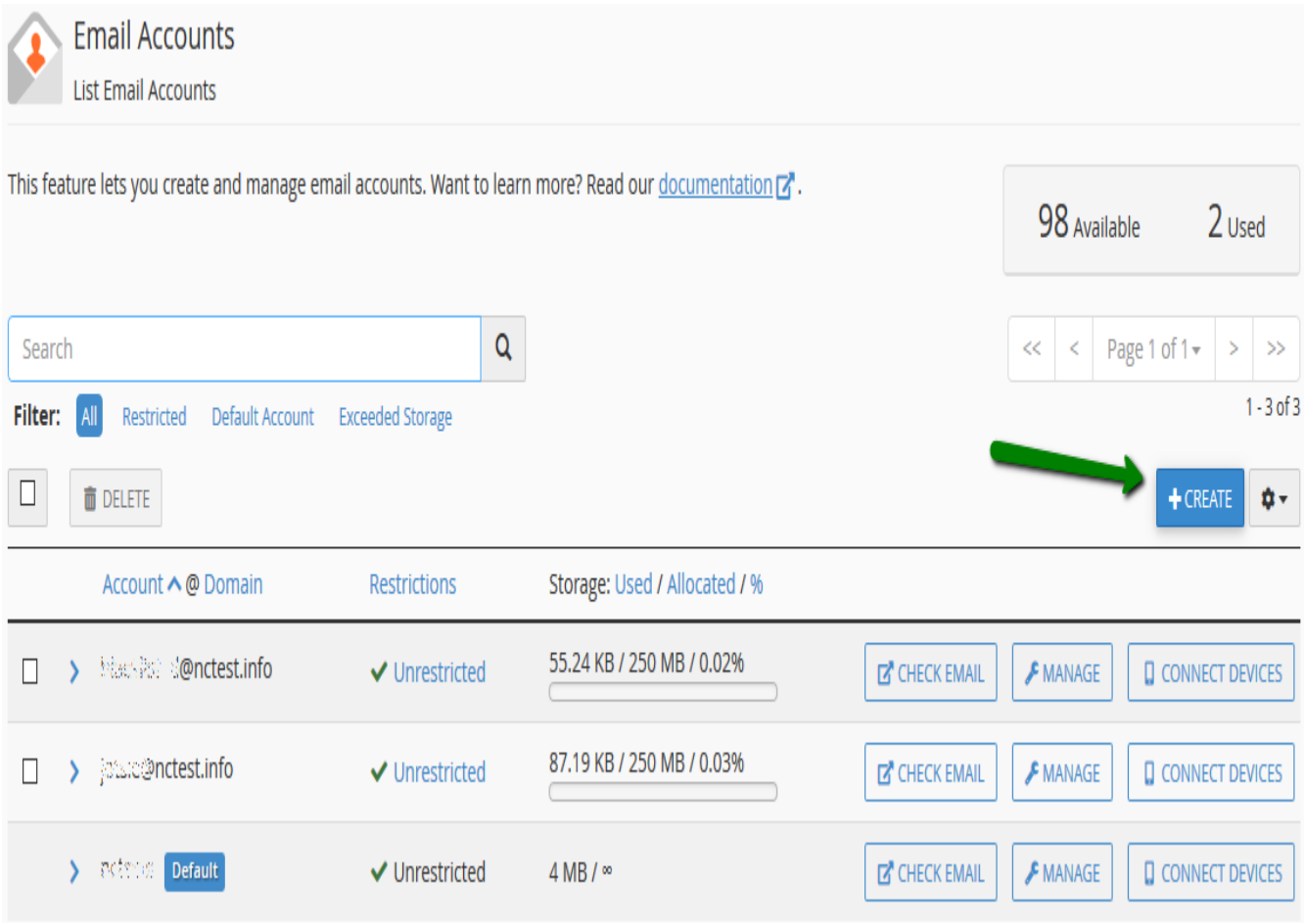
In order to create a new email account in cPanel, follow the instructions below:

1. Log in to your **cPanel** >> **Mail** section >> **Email Accounts** menu.

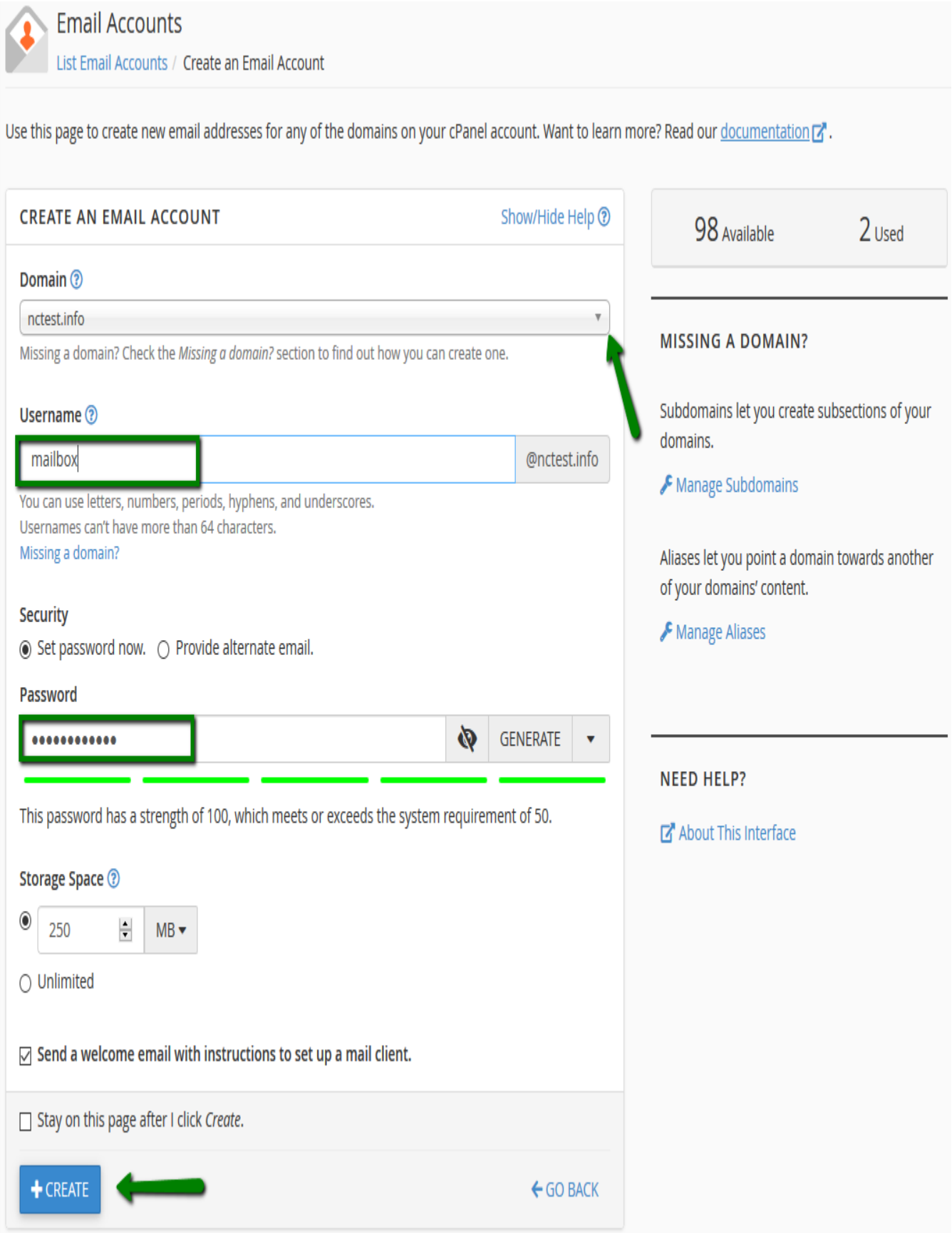
The **Email Accounts** menu can be accessed quickly via cPanel Shortcuts in the Namecheap account.



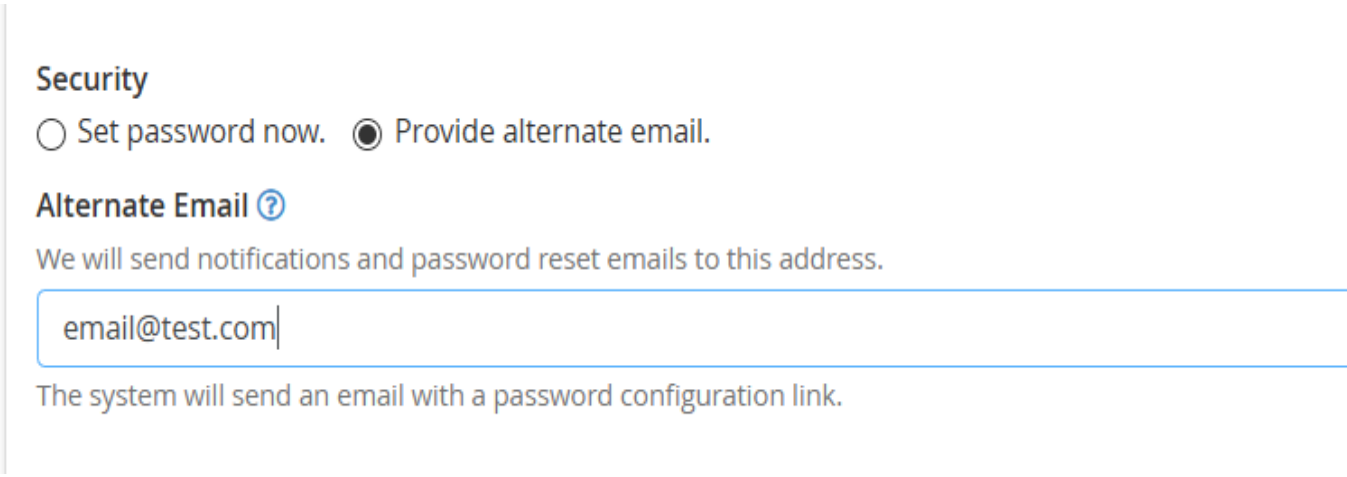
2. Navigate to the +Create button:



3. **If you have multiple domains**, select the domain you want your email account to be associated with in the drop-down list in the top right corner and enter the desired email.
It is possible either to set the password right away: or provide an alternate email (the system will send an email with a password configuration link).

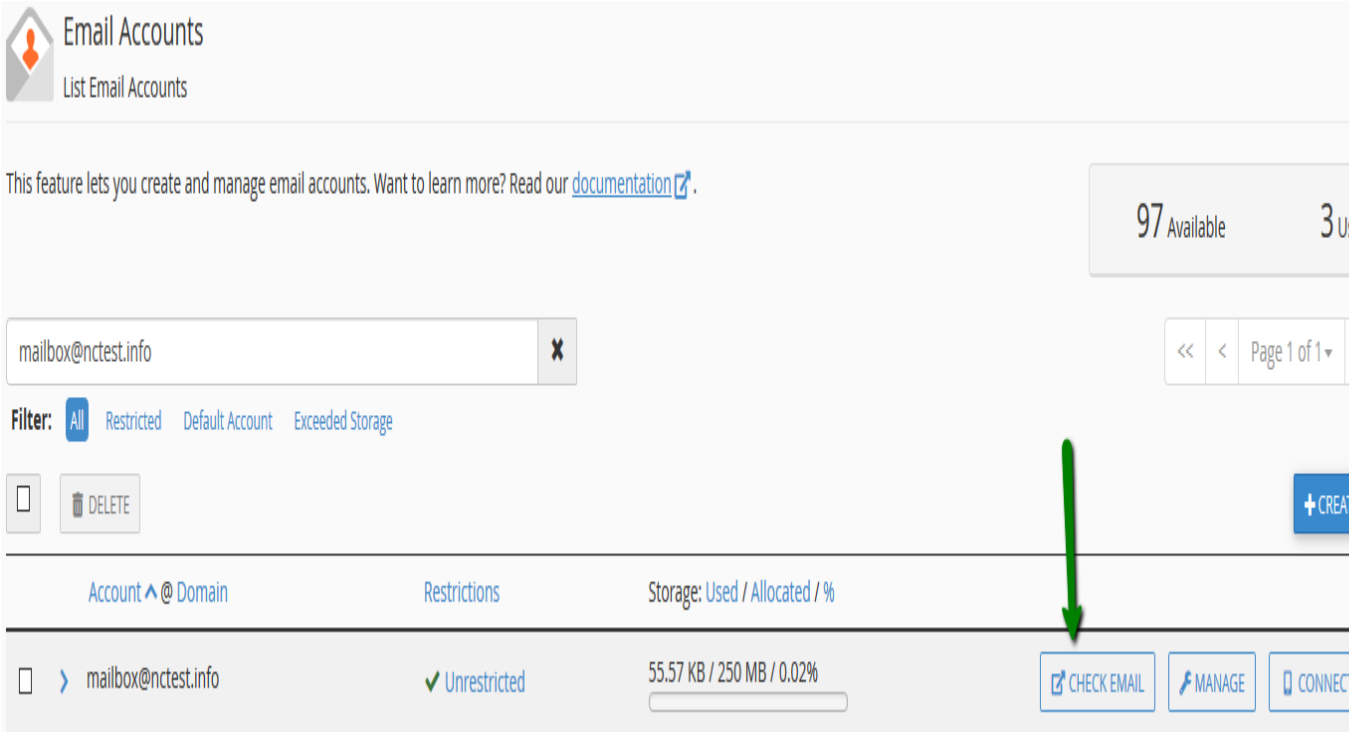


Or provide an **alternate email** (the system will send an email with a password configuration link as well as notifications and password reset emails):



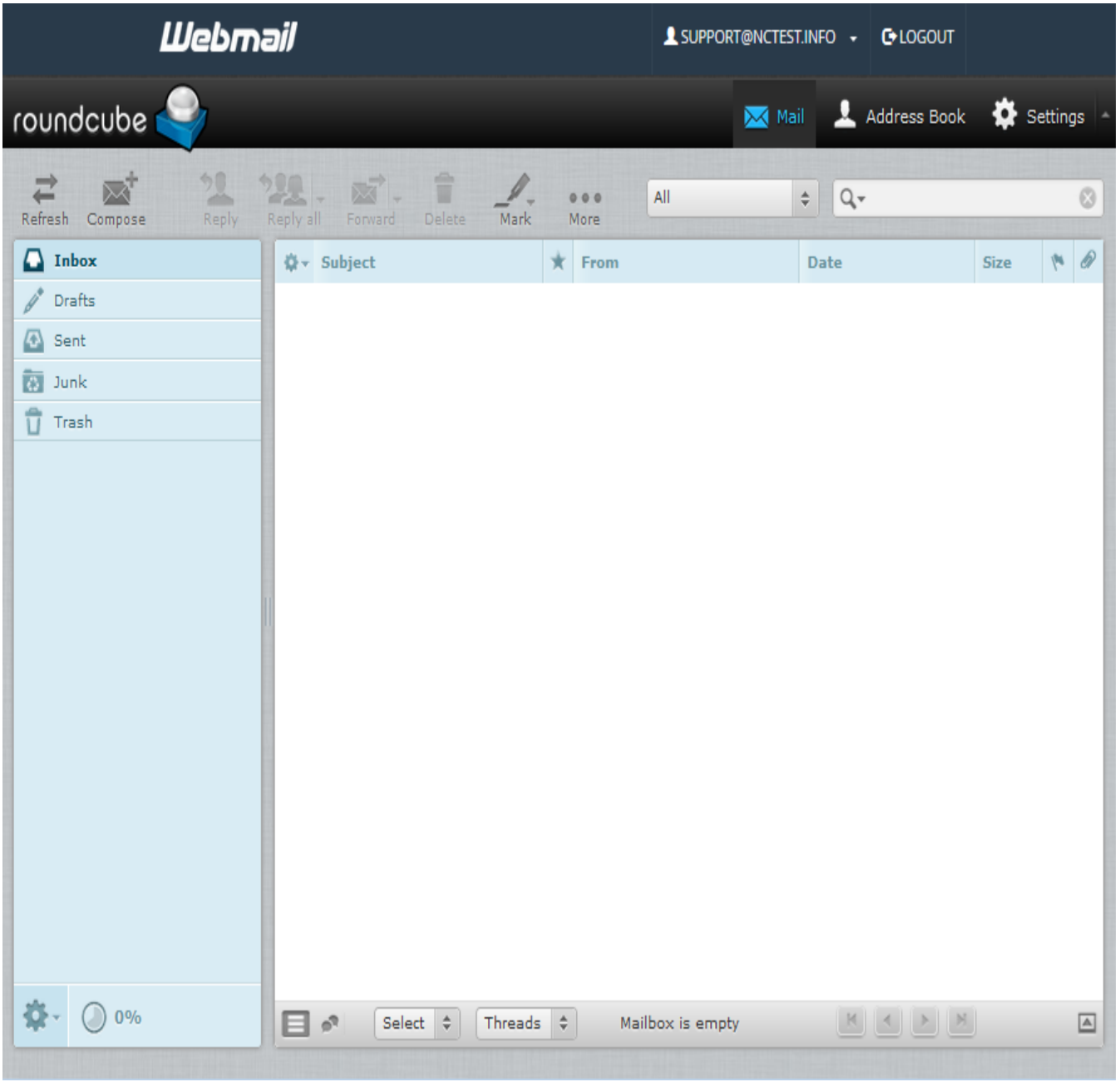
Click on **+Create** once all is set.

4. To log in webmail, click on **Check Email** next to the email account in question:



5. Feel free to choose any access webmail.

Roundcube webmail interface:



You can also access **cPanel** webmail directly in the browser using one of the following links:

https://yourdomain.com:2096
https://yourdomain.com/webmail
http://webmail.yourdomain.com

NOTE: If you use *http://webmail.yourdomain.com* link to get into your **cPanel** webmail, you will most likely see a 'broken' interface when accessing Horde webmail client. It happens since such proxy link uses port 80 to connect, while

the default cPanel configuration for the aforementioned clients implies port 81. This mismatch may result in a connection error or a corrupted webmail displaying.

ii) Differentiate between blackhat and whitehat SEO.

Sol:-

Below is a table of differences between **Black Hat SEO** and **White Hat SEO**:

S. No.	Black Hat SEO	White Hat SEO
1.	Black Hat SEO refers to the use of aggressive SEO tactics and strategies that focus only on search engine not on human audience.	White Hat SEO refers to the use of optimization SEO tactics and strategies that focus more on human audience as opposed to search engine and completely follow search engines rules and policies.
2.	It is used by those who are looking for quick financial returns on their website.	It improves your search performance on search engine result page(SERP) along maintaining the integrity of the website.
3.	It contains stuff and spam keywords into the on-page contents to fool the search engine spiders and improve ranking.	It contains proper research, craft titles, Meta tags according to webpage, industry, relevance
4.	It consists of irrelevant back links.	It gets the link because of quality content.
5.	It exchanges the links for the ranking.	It consists of natural links.
6.	It is also known as Unethical SEO.	It is also known as Ethical SEO.
7.	It is used for short-term goals and benefits.	It is used for long-term goals and benefits.
8.	This type of optimization is not approved by search engines.	This type of optimization is approved by search engines.

9.	Black Hat SEO does not follow Google's guidelines.	White Hat SEO provides a better experience to users by following Google's guidelines.
10.	Techniques used- • Keyword stuffing • Doorway and cloaked pages • Creating blog comment spam • Hidden texts • Hidden links • Participation in Link Schemes	Techniques used- • Research • Analysis • Re- writing of meta tags to be more appropriate • Improvement of content • Redesign web • Having Fast Page Loading Times • Prioritizing Mobile-Friendliness
11.	It doesn't fulfill the search intent.	It satisfies the aim of the search.
12.	Manipulation takes the place of the algorithm to get better results.	It can achieve a high ranking via Organic means.
13.	It degrades the user experience.	It's beneficial to the user experience.
14.	It is not concerned in producing high-quality content	It is dedicated to producing high-quality content.
15.	It reduces the trustworthiness of websites.	It improves the credibility of a website.
16.	It reduces the authority of a website.	It increases the authority of a website.
17.	Black Hat SEO is disapproved by the search engines.	White Hat SEO is approved by the search engine.
18.	Black Hat SEO contains Duplicate Content.	White Hat SEO contains relevant content.
19.	There is high risk in Black Hat SEO.	There is low or zero risk in White Hat SEO.

20.	Black Hat SEO also contains irrelevant backlinks.	White Hat SEO also contains relevant backlinks.

b. Explain the SEO and its importance. Differentiate between OnPage Optimization and OffPage Optimization under SEO.

Sol:-

SEO is the practice of increasing the quantity and quality of traffic to your website through organic search engine results. A higher rank when someone searches a term in your industry increases your brand's visibility online. The increase in visibility will drive more organic traffic to your site, and this, in turn, gives you more opportunities to convert qualified prospects into customers. When done correctly, SEO can help your brand stand above others as a trustworthy company and further improve the user's experience with your brand and website.

SEO is important for brands as it's a highly effective way to improve your brand's visibility through search, drive more traffic to your website, establish your brand as a trusted authority in your industry, sustainably and reliably grow your business, and much more. Here's how each of these factors contributes to the importance of SEO for your brand.

Visibility and Rankings

When searching for a service or product online, users are more likely to choose one of the top five suggestions that the search engine shows them. After all, while Google may return thousands upon thousands of search results for any given term, the vast majority of searchers never make it past the first page, and more than 25% of people click the first search result they see. SEO helps you rank higher in search results and garner more visibility online, making potential customers more likely to click over to your site and convert.

Even if users don't visit and convert now, simply populating in the rankings will make users more familiar with your brand. In the future, they're more likely to remember your brand name the next time they're interested in associated products and services, and they may search for you directly.

Web Traffic

To put it simply—if potential customers can't find your website, you miss out on sales opportunities. SEO increases your organic search engine traffic, in turn increasing the number of visitors your website sees each day. This directly correlates to an increase in sales—because the more relevant people see your site, the more chances you have to sell to them.

Trustworthy

The better optimized your site is, the higher you'll appear on search engines like Google and Bing. While ranking higher on Google is appealing to all brands because of increased visibility, a secondary benefit is the trust you gain with potential customers. Users tend to defer to the recommendations that a search engine generates,

so having a higher position for the keywords a user is searching for will solidify your product or service as trustworthy in the user's mind.

User Experience

A well-optimized website clearly communicates what product or service is being offered, shows how to obtain it, and answers any questions surrounding it. User experience is a major ranking factor for Google. This means that by catering the site to appeal to search engines like Google and Bing, you're also catering it to the user's experience. This means both search engines and users are able to easily get the information they need. On the other hand, if a user struggles to navigate your site, chances are that search engines will as well.

Growth

There's no doubt about it—SEO carries a lot of importance for the growth of your brand. As we mentioned above, the higher you rank on a search engine for a variety of high-volume keywords, the more organic (aka non-paid) web traffic your site will receive. It's as simple as that.

A website that is well optimized is more likely to gain more customers and make more sales due to increased lead generation. People are also more likely to share your brand across other social platforms like Facebook or Instagram once they've found your website through a search engine.

Difference between OnPage Optimization and OffPage Optimization under SEO:

S. No.	On-Page SEO	Off-Page SEO
1.	On-page SEO includes providing good content, good keyword selection, putting keywords in correct places, giving an appropriate title for every page, etc.	Off-page SEO includes link building, increasing link popularity, search engine, link exchange etc.
2.	On-page SEO will analyze the complete website.	In off-page SEO we will promote the website.
3.	On-page SEO we will use internal linking.	In off-page SEO we will use direct linking.
4.	On-page SEO is for Content writing.	Off-page SEO is for Article writing.

5.	Techniques that are used in on-page SEO. • Publish high-quality content. • Optimize page titles and meta descriptions. • Optimize page content. • Headings and content formatting. • SEO Images and other multimedia elements. • URL optimization. • Internal links. • External links.	Techniques that are used in off-page SEO. • Influencer Outreach. • Contribute as Guest Author. • Social Media Engagement. • Social Bookmarking Sites. • Forum Submission. • Blog Directory Submission. • Article Submission
6.	According to the **MOZ** website owners spend about 70% of time on on-page activity	While on off page it only 30% activity
7.	On-page SEO looks at what your site is about.	Off-page SEO looks at how popular your site is.
8.	Factors that impact On-page SEO are as follows- • Internal Linking • Mobile Friendly • Navigation • Content Quality • Meta Descriptions • Image Alt Text • Page Speed • Core Web Vitals • Title Tags	Factors that impact Off-page SEO are as follows- • Social Media • Backlinks • Mentions • Google Business Profile (earlier Google My Business)
9.	Both SEO work together in a complementary fashion to achieve Search Engine Optimization which is our main goal. We cannot select which is more important between the two. But in the whole process, SEOs recommend that the focus should be given to on-page SEO before off-page SEO.	Both SEO work together in a complementary fashion to achieve Search Engine Optimization which is our main goal. We cannot select which is more important between the two. But in the whole process, SEOs recommend that the focus should be given to on-page SEO before off-page SEO.

10.	Applying relevant subtopics to content is the example of on-page SEO.	Link Building is the example of off- page SEO.