Subject Code:3171616   Date:17/12/2021

Subject Name: Internetwork Security and Web Analytics

Time: 10:30 AM TO 01:00 PM   Total Marks: 70

MARKS

Q.1   (a)   Explain key performance indicator   **03**

A Key Performance Indicator (KPI) is a measurable value that indicates how well an organization is achieving its key business objectives. It is a quantifiable metric that is used to evaluate the success of a specific activity or process. KPIs are used to track the performance of a business, department, project, or campaign. They help organizations to understand how well they are performing, identify areas for improvement, and make data-driven decisions.

KPIs can be used to track a wide range of performance metrics, such as website traffic, conversion rates, revenue, customer satisfaction, and employee productivity. For example, in web analytics, a common KPI is the number of website visitors, the bounce rate, the conversion rate, the average time on site, etc.

KPIs should be specific, measurable, actionable, relevant, and time-bound (SMART). This means they should be:

- Specific: clearly defined and easy to understand

- Measurable: quantifiable, able to be tracked and measured

- Actionable: able to be used to make decisions and take action

- Relevant: directly related to the business objectives

- Time-bound: have a specific timeframe for measuring and reporting

By selecting the right KPIs, organizations can track the performance of their business and make data-driven decisions to improve their overall performance.

(b)   Discuss and describe types of cyber-attacks.   **04**

There are many different types of cyber-attacks, but some of the most common include:

1. Phishing: This type of attack involves tricking people into giving away sensitive information, such as passwords or credit card numbers, through fake emails or websites.

2. Malware: This type of attack involves using software, such as viruses or Trojan horses, to damage or gain unauthorized access to a computer or network.

3. Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks: These types of attacks involve overwhelming a website or network with traffic, making it unavailable to

legitimate users.

4. SQL injection: This type of attack involves injecting malicious code into a website's database, allowing the attacker to access sensitive information or take control of the site.

5. Advanced persistent threat (APT): APT is a targeted and prolonged cyber-attack in which an intruder establishes an unlawful, long-term presence on a network to steal sensitive data.

6. Ransomware: Ransomware is a type of malware that encrypts the victim's files and demands a ransom payment to restore access.

7. IoT attack: IoT attacks are a type of cyber-attack that targets Internet of Things (IoT) devices, such as smart home devices, to gain access to a network or steal sensitive information.

8. Social engineering: Social engineering is a non-technical method of intrusion that relies heavily on human interaction and often involves tricking people into breaking security procedures.

(c) Write a short note on security issues in TCP/IP model protocol   **07**

2 Security problems of TCP

In this section, we address problems of the current version of TCP.

TCP provides fundamental communication service and is used by many application protocols. Therefore, TCP becomes one of the most popular protocol. But TCP has several security problems as follows.

- TCP cannot guard a segment against the message modification attacks.

  TCP has a checksum field. This field is used in order to identify a modification of a segment. However, since this field is not protected against the message modification attacks, it is possible to modify any TCP segments. Moreover, there is no ways for peer entities to find out the message modification attacks.

- TCP cannot keep segment data secure against the message eavesdropping attacks.

  TCP transports stream data used in the application layer. Since TCP does not provide any data encryption functions, anyone can gain any valuable information.

- TCP cannot protect connections against the unauthorized access attacks.

  TCP certifies a peer entity by a source IP address and a port number. However, it is possible to modify the source address and port number.

  OR

TCP/IP, or Transmission Control Protocol/Internet Protocol, is the foundation of the internet and is used to transmit data between devices. However, the TCP/IP model also has several security issues that can be exploited by attackers.

One major security issue is the lack of built-in encryption, which makes it easy for attackers to intercept and read sensitive information being transmitted over the network. Another issue is the lack of authentication, which allows attackers to impersonate other devices on the network.

The TCP/IP protocol also has several vulnerabilities in its implementation, such as buffer overflow attacks, which can allow attackers to gain unauthorized access to a device or network. Additionally, TCP/IP is susceptible to spoofing attacks, which involve altering the source address of a packet to hide the attacker's identity.

There are several security measures that can be implemented to mitigate these issues, such as using virtual private networks (VPNs) to encrypt data, using firewalls to block unauthorized access, and implementing intrusion detection and prevention systems (IDPS) to detect and respond to attacks.

However, it's important to note that despite these security measures, the TCP/IP protocol is still vulnerable to new attack methods and vulnerabilities that can be discovered in the future. It's important to keep the network and devices updated and maintain a security-conscious mindset to protect against potential security issues.

Q.2 **(a)** Explain the types of web analytics. **03**

Web analytics is the process of collecting, measuring, and analyzing data about website visitors and their behavior. There are several types of web analytics, including:

1. On-site analytics: This type of analytics focuses on measuring the behavior of visitors while they are on the website, such as the pages they visit, the amount of time they spend on the site, and the actions they take. This type of analytics typically includes data such as page views, unique visitors, bounce rates, and conversion rates.

2. Off-site analytics: This type of analytics focuses on measuring the behavior of visitors outside of the website, such as the referring website or search engine, and the keywords used to find the site. This type of analytics can provide insights into the effectiveness of external marketing campaigns and the sources of website traffic.

3. Real-time analytics: This type of analytics provides real-time data about the behavior of visitors on the website. Real-time analytics can help website owners quickly identify and respond to issues, such as high bounce rates or low conversion rates.

4. Marketing analytics: This type of analytics helps website owners measure the effectiveness of their marketing campaigns. Marketing analytics can track the performance of different channels, such as email marketing, social media, and pay-per-click advertising, and provide insights into which campaigns are driving the most conversions and revenue.

5. E-commerce analytics: This type of analytics is specific to online stores and provides data on sales, revenue, and customer behavior. E-commerce analytics can help website owners optimize their store and improve the customer experience.

6. Web scraping: This type of analytics uses bots to automatically collect data from a website, in order to track the performance of a website, competitor or industry.

By using these types of web analytics, website owners can gain valuable insights into the behavior of their visitors and make data-driven decisions to improve their website and online marketing efforts.

(b) Explain objective and benefits of web analytics **04**

The main objective of web analytics is to collect, measure, and analyze data about website visitors and their behavior in order to gain insights into how to improve the website and online marketing efforts. By understanding how visitors interact with the website, website owners can make data-driven decisions to optimize the user experience, increase conversions, and ultimately drive more revenue.

Some of the key benefits of web analytics include:

1. Understanding customer behavior: Web analytics provides insights into how visitors interact with the website, such as the pages they visit, the amount of time they spend on the site, and the actions they take. This information can be used to optimize the website and improve the customer experience.

2. Improving website performance: By analyzing website data, website owners can identify areas of improvement, such as high bounce rates or low conversion rates, and make changes to improve the website's performance.

3. Identifying trends: Web analytics can help website owners identify trends in customer behavior, such as the most popular pages, products, or services, and use this information to make strategic decisions.

4. Measuring marketing effectiveness: Web analytics can help website owners measure the effectiveness of their marketing campaigns, such as pay-per-click advertising, email marketing, and social media, and make data-driven decisions about which campaigns to invest in.

5. Identifying new opportunities: Web analytics can help website owners identify new opportunities for growth, such as new products, services, or markets to expand into.

6. Cost-effective: It's a cost-effective way to understand the customer behavior, website performance, and marketing effectiveness as it don't require any additional cost.

(c) Explain different types of websites in detail. **07**

There are several different types of websites, each with their own unique purpose and features. Some of the most common types of websites include:

1. E-commerce websites: E-commerce websites are designed for online shopping, allowing customers to purchase products or services directly from the website. These websites often include features such as product catalogs, shopping carts, and checkout pages.

2. Informational websites: Informational websites are designed to provide information about a particular topic or industry. These websites often include features such as articles, blog posts, and FAQs. They are often used for providing information about a company, its products or services, or a particular topic.

3. Blog websites: Blog websites are designed to provide a platform for individuals or companies to share their thoughts and opinions through written content, such as articles or

blog posts. These websites often include features such as comments sections, social media integration, and the ability to subscribe to updates.

4. Social media websites: Social media websites are designed to connect people online and allow them to share content and interact with one another. These websites often include features such as user profiles, friend lists, and the ability to post and share content.

5. News websites: News websites are designed to provide up-to-date information on current events, often with a focus on a specific topic or industry. These websites often include features such as breaking news alerts, articles, and video content.

6. Business websites: Business websites are designed to provide information about a company, its products or services, and its mission. These websites often include features such as company information, product catalogs, and contact information.

7. Educational websites: Educational websites are designed to provide educational resources, such as online courses, tutorials, and videos. These websites often include features such as quizzes, interactive activities, and progress tracking.

8. Portfolio websites: Portfolio websites are designed to showcase the work of an individual or company, such as a graphic designer, artist, or photographer. These websites often include features such as galleries, case studies, and client testimonials.

9. Non-profit websites: Non-profit websites are designed to provide information about a non-profit organization, its mission and goals, and ways to get involved. These websites often include features such as donation forms, volunteer opportunities, and events calendars.

Each website type has its own unique features and functionalities, and the choice of which type of website to use will depend on the goals and objectives of the website owner.

OR

(c) Explain the features of web analytics tool **07**

Web analytics tools are software applications that are used to collect, measure, and analyze data about website visitors and their behavior. Some of the key features of web analytics tools include:

1. Data collection: Web analytics tools collect data about website visitors and their behavior, such as the pages they visit, the amount of time they spend on the site, and the actions they take.

2. Data visualization: Web analytics tools provide easy-to-understand visual representations of the data, such as charts, graphs, and dashboards, to help website owners quickly identify patterns and trends.

3. Segmentation: Web analytics tools allow website owners to segment the data by different criteria, such as geographic location, device type, or referral source, to gain a more detailed understanding of visitor behavior.

4. Goal tracking: Web analytics tools allow website owners to set and track specific goals, such as tracking the number of conversions or sales, and measure the performance of the website in achieving these goals.

5. Funnel analysis: Web analytics tools allow website owners to track how visitors move through different stages of a process, such as the checkout process, and identify any areas where visitors are dropping out.

6. A/B testing: Many web analytics tools include A/B testing functionality, which allows website owners to test different versions of a webpage to see which one performs better.

7. Integration: Some web analytics tools can be integrated with other tools and platforms, such as Google Analytics, to provide more comprehensive data and insights.

8. Real-time data: Many web analytics tools provide real-time data about the behavior of visitors on the website, allowing website owners to quickly identify and respond to issues.

9. Multi-channel tracking: Web analytics tools allow website owners to track the performance of different marketing channels, such as email marketing, social media, and pay-per-click advertising, and make data-driven decisions about where to invest.

10. Mobile tracking: Many web analytics tools include mobile tracking functionality, which allows website owners to track the behavior of visitors accessing the website from mobile devices.

> By using these features, website owners can gain valuable insights into the behavior of their visitors and make data-driven decisions to improve their website and online marketing efforts.

Q.3 (a) Differentiate internal search and external search **03**

Internal search refers to the search function on a website that allows users to search for specific content or information within the website. External search refers to the use of search engines, such as Google, to search for information on the internet.

Here is a comparison of internal search and external search:

Internal search	External search
Searches within a specific website	Searches the entire internet
Can provide more precise and relevant results	Can provide a wider range of results
May not include results from other websites	May include results from other websites
Can help to improve the user experience on the website	Can help to drive traffic to the website

Internal search can be a useful tool for improving the user experience on a website by allowing users to easily find specific information within the site. External search can be a powerful tool for driving traffic to a website and increasing visibility on the internet.

(b) Explain the analytics metrics life cycle   **04**

The analytics metrics life cycle is the process of identifying, collecting, analyzing, and acting on data to improve website performance and online marketing efforts. The life cycle typically includes the following stages:

1. Identify: The first stage of the analytics metrics life cycle is to identify the key metrics that will be tracked and analyzed. These metrics should align with the goals and objectives of the website, such as increasing conversions or driving more revenue.

2. Collect: Once the key metrics have been identified, the next stage is to collect the data. This involves setting up tracking and measurement tools, such as web analytics software, to collect data on website visitors and their behavior.

3. Analyze: The collected data is then analyzed to identify patterns and trends, and gain insights into how visitors interact with the website. This stage also includes creating visualizations and reports to help website owners understand the data.

4. Act: The final stage of the analytics metrics life cycle is to take action based on the insights gained from the data. This could include making changes to the website, such as optimizing the user experience or improving the checkout process, or adjusting marketing campaigns to improve performance.

5. Monitor: After taking action it is important to monitor the result, to know if the changes had the desired effect, and if not, re-evaluate the strategy.

6. Iterate: Iterating the process by repeating the steps over time and continuously monitoring, analyzing and acting on data to improve the website performance.

It's important to note that the analytics metrics life cycle is an iterative process, meaning that it's not a one-time event but a continuous process of data collection, analysis, action, and monitoring. By continuously going through this process, website owners can make data-driven decisions to improve the performance of their website and online marketing efforts over time.

(c) Explain SEO and its working   **07**

SEO (Search Engine Optimization) is the process of improving the visibility and ranking of a website or a web page in search engine results pages (SERPs) through organic or unpaid search results. The goal of SEO is to increase website traffic by making it easier for users to find the website through search engines, such as Google, Bing, and Yahoo.

SEO works by making a website more search engine-friendly, so that search engines can understand the relevance and value of the website's content. This is done by optimizing the website's structure, content, and keywords to make it more relevant to specific search queries.

There are several key factors that are taken into account by search engines when determining the relevance and value of a website's content, including:

1. Keyword research: Identifying the keywords that users are searching for and incorporating them into the website's content, meta tags, and URLs.

2. On-page optimization: Optimizing the website's content, structure, and images to make it more search engine-friendly.

3. Link building: Building high-quality links to the website from other relevant websites, as search engines view links as a signal of the website's relevance and authority.

4. Content creation: Creating high-quality, informative, and engaging content that is relevant to the website's target audience, that helps to establish the website as an authority on a particular topic.

5. Technical SEO: Technical SEO includes optimizing the website's code and structure to make it more search engine-friendly, such as optimizing the website's loading speed, mobile optimization, and other technical aspects.

6. Social signals: Social signals such as likes, shares, and comments, also play an important role in SEO as it helps to increase visibility and attract more traffic to the website.

OR

Q.3 **(a)** Define PPC and explain its working. **03**

Pay-per-click (PPC) is an online advertising model in which advertisers pay a fee each time one of their ads is clicked. PPC ads typically appear on search engine results pages or on websites that are part of a PPC advertising network.

Here is how PPC works:

1. Advertisers create ads and bid on keywords: Advertisers create ads and bid on specific keywords that they want their ads to appear for when users search for those terms. The higher the bid, the more likely the ad is to appear in a prominent position on the search results page.

2. Ads are displayed: When a user searches for a keyword that an advertiser has bid on, their ad may appear on the search results page or on other websites in the PPC network.

3. Users click on the ad: If a user clicks on the ad, they are directed to the advertiser's website.

4. The advertiser pays the fee: The advertiser pays the fee for the ad click, which is usually a small amount, such as a few cents or dollars.

(b) Explain FCP.LCP, CLS, FID in detail **04**

FCP (First Contentful Paint) is a performance metric that measures the time it takes for a website to render the first content on the page. This can include text, images, or other types of content. FCP is an important metric because it can impact the user experience, as users may become frustrated if they have to wait too long for content to load.

LCP (Largest Contentful Paint) is a performance metric that measures the time it takes for the largest content element on a webpage to load. This can include images, videos, or other types of content. LCP is an important metric because it can impact the user experience, as users may become frustrated if they have to wait too long for the main content of a page to load.

CLS (Cumulative Layout Shift) is a performance metric that measures the stability of a webpage. It measures the amount of unexpected layout shifts that occur on a page, such as when content moves or changes unexpectedly as a result of images or other elements loading. A high CLS score can indicate a poor user experience, as it can make a webpage feel unresponsive or jarring to use.

FID (First Input Delay) is a performance metric that measures the time it takes for a webpage to respond to user input, such as a click or a keystroke. A high FID score can indicate a poor user experience, as it can make a webpage feel unresponsive or slow to use.

(c) Explain the protocols involved with application layer. **07**

The application layer is the highest layer in the OSI (Open Systems Interconnection) model, which is a framework for understanding how communication occurs between computers and devices. It is responsible for enabling application programs to access network resources and services.

There are several protocols that are involved with the application layer, including:

1. HTTP (Hypertext Transfer Protocol): This protocol is used to transmit hypertext documents, such as web pages, over the internet. It is the foundation of the World Wide Web and is used by web browsers and servers to communicate with each other.

2. HTTPS (Hypertext Transfer Protocol Secure): This protocol is an extension of HTTP that uses encryption to secure the communication between a web browser and a web server. It is used to transmit sensitive information, such as login credentials and financial data, over the internet.

3. FTP (File Transfer Protocol): This protocol is used to transfer files between computers over the internet. It is commonly used to upload and download files from web servers.

4. SMTP (Simple Mail Transfer Protocol): This protocol is used to transmit electronic mail (email) between servers. It is the foundation of email communication and is used by email clients and servers to send and receive messages.

5. DNS (Domain Name System): This protocol is used to translate human-readable domain names, such as "example.com," into the numerical IP addresses that computers use to communicate with each other. It is an essential part of the internet infrastructure.

By using these and other protocols, the application layer enables application programs to access network resources and services and communicate with other devices and systems.

Q.4 **(a)** Explain the three layers of 'SO WHAT TEST'. **03**

The "SO WHAT test" is a method used to evaluate the significance of data and metrics in web analytics. It involves asking three questions to determine if a particular metric or data point is meaningful and actionable. The three layers of the SO WHAT test are:

1. "What?" - This question is used to identify the data or metric in question. It involves defining the metric, such as the number of website visitors, and determining where it can be found in the analytics data.

2. "So What?" - This question is used to evaluate the significance of the data or metric. It involves analyzing the data to determine if it is meaningful and if it has any impact on the business or website. For example, if the website has a high number of visitors, it may be significant, but if the majority of those visitors are not converting into customers, then it may not be meaningful.

3. "Now What?" - This question is used to determine the next steps or actions that should be taken based on the data or metric. It involves identifying opportunities for improvement and making decisions on how to optimize the website or business based on the insights gained from the analysis. For example, if the data shows that a high number of visitors are leaving the website on a specific page, the next step could be to optimize that page to improve the user experience and reduce bounce rate.

By answering these questions, you can determine whether a particular metric or data point is meaningful and actionable, and make decisions on how to improve your website or business based on the insights gained from the analysis.

(b) What is A/B Testing?   **04**

A/B testing (also known as split testing or bucket testing) is a method of comparing two versions of a webpage or app to determine which one performs better. It is a way to make data-driven decisions by testing different variations of a page or feature with a sample of real users.

The process of A/B testing typically includes the following steps:

1. Identify the goal or objective of the test: Before starting an A/B test, it's important to have a clear objective in mind, such as increasing conversion rates, improving the user experience, or reducing bounce rate.
2. Create a control and a variation: The control is the original version of the webpage or feature that is currently live. The variation is a new version that includes changes made to the design, layout, or functionality of the page.
3. Select a sample of users: The sample of users will be randomly divided into two groups: the control group, who will see the original version of the page, and the variation group, who will see the new version of the page.
4. Run the test: The test is run for a specified period of time, during which both versions of the page are shown to the sample of users. It's important to run the test for a long enough period to ensure that the sample size is large enough to make meaningful conclusions
5. Analyze the results: Once the test is complete, the data is analyzed to determine which version of the page performed better. The results are usually measured in terms of key metrics such as conversion rates, bounce rate, time on site, and revenue.
6. Implement the winning version: After the test is complete, the winning version of the page is implemented on the live website.

A/B testing is a powerful tool that can help businesses optimize their websites and improve the user experience by making data-driven decisions. It allows for testing different hypotheses, variations, and ideas without risking the whole website or app performance.

(c) What is site search analysis? **07**

Site search analysis is the process of analyzing the search queries and behaviors of users on a website. It involves analyzing data from the site's search engine to understand what users are searching for, how they are using the search function, and what they are finding (or not finding) on the website.

Site search analysis can provide valuable insights into user behavior and preferences and help businesses identify opportunities to improve the user experience on their website. It can also help businesses identify gaps in their content or identify areas where users may be struggling to find what they are looking for.

To perform site search analysis, businesses can use tools such as Google Analytics or specialized site search analytics software. These tools can provide data on search queries, search results, and other metrics, such as the number of searches, the number of clicks on search results, and the average time spent on search results pages.

By analyzing this data, businesses can understand the needs and preferences of their users and identify opportunities to optimize their website and improve the user experience.

OR

Q.4 **(a)** Explain the tracking matrices for SEO **03**

Tracking matrices are tools used to monitor and measure the performance of search engine optimization (SEO) efforts. They allow businesses to track the effectiveness of their SEO strategies and identify areas for improvement.

There are several different types of tracking matrices that can be used for SEO, including:

1. Keyword tracking matrix: This matrix tracks the ranking of specific keywords or phrases in search engine results pages (SERPs). It can help businesses understand how their website is performing for different keywords and identify opportunities to improve their ranking.

2. Traffic tracking matrix: This matrix tracks the number of visitors to a website and how they arrived at the site. It can help businesses understand the sources of their traffic and identify opportunities to increase website traffic.

3. Conversion tracking matrix: This matrix tracks the number of conversions (e.g., sales or leads) generated from a website and the conversion rate (i.e., the percentage of visitors who convert). It can help businesses understand the effectiveness of their website in generating conversions and identify opportunities to improve the conversion rate.

4. Link tracking matrix: This matrix tracks the number and quality of links pointing to a website. It can help businesses understand the value of their inbound links and identify opportunities to improve their link profile.

(b) What are the responsibilities of webmaster?   **04**

A webmaster is a person who is responsible for the maintenance and management of a website. Some of the responsibilities of a webmaster may include:

1. Updating and maintaining the website: This may involve adding or modifying content, fixing broken links, and ensuring that the website is functioning properly.

2. Monitoring website traffic and performance: Webmasters may use tools to track the number of visitors to a website, the pages they visit, and other metrics. They may also use this data to identify and troubleshoot issues with the website.

3. Improving search engine optimization (SEO): Webmasters may work to improve the ranking of a website in search engine results pages by optimizing the website's content and structure.

4. Ensuring website security: Webmasters may implement security measures to protect a website from attacks or breaches, such as installing and updating security software.

5. Providing technical support: Webmasters may provide technical support to website users, such as helping them troubleshoot issues with the website or answering questions about its features.

6. Collaborating with other team members: Webmasters may work with other team members, such as designers, developers, and content creators, to ensure that the website meets the needs of the business and its users.

(c) Explain the process of website testing.   **07**

Website testing is the process of evaluating a website's functionality, usability, and performance in order to identify any issues and improve the user experience. The process typically includes the following steps:

1. Plan the test: Before testing the website, it's important to have a clear plan in place. This includes defining the goals of the test, identifying the target audience, and selecting the appropriate testing methods.

2. Prepare the test environment: Set up the testing environment, including the hardware and software needed to run the test. This can include installing testing tools, creating test accounts, and configuring the website to be tested.

3. Conduct the test: There are different types of website testing, including functional testing, usability testing, compatibility testing, performance testing, and security testing. Each of these types of testing are designed to evaluate different aspects of the website.

4. Analyze the results: After the test is complete, the data is analyzed to identify any issues or problems that were found during the test. The results are usually reported in the form of a detailed test report.

5. Implement fixes and improvements: Based on the results of the test, changes and improvements are made to the website. These can include fixing bugs, optimizing the user interface, and improving the overall performance of the website.

6. Retest: Once the changes are made, it is important to retest the website to ensure that the issues have been resolved and that the website is functioning as expected.

Website testing is an ongoing process that is essential for ensuring that a website is functioning correctly and providing the best possible experience for users. It helps to ensure that the website is accessible, easy to use, and free of errors, which can lead to a better user experience, higher conversion rates, and improved overall performance.

Q.5 **(a)** What are streaming analytics. **03**

Streaming analytics is the process of analyzing data in real-time as it is generated or received, rather than in batch mode. It allows businesses to monitor and analyze data streams in near real-time, enabling them to make informed decisions and take actions based on the most up-to-date information.

Streaming analytics can be used in a variety of applications, including:

1. Fraud detection: Streaming analytics can be used to identify and prevent fraudulent activity in real-time, such as credit card fraud or identity theft.

2. Customer analytics: Streaming analytics can be used to track customer behavior and preferences in real-time, allowing businesses to tailor their marketing and sales efforts to individual customers.

3. Supply chain management: Streaming analytics can be used to monitor and optimize the flow of goods and materials through a supply chain, enabling businesses to respond to changes in demand or supply in real-time.

4. Financial trading: Streaming analytics can be used to monitor and analyze financial data in real-time, enabling traders to make informed decisions about buying and selling stocks, bonds, and other financial instruments.

(b) What are the benefits of multichannel marketing **04**

Multichannel marketing is the use of multiple channels or platforms to reach and engage with customers. Some of the benefits of multichannel marketing include:

1. Increased reach: By using multiple channels, businesses can reach a wider audience and increase their visibility.

2. Improved customer experience: Multichannel marketing allows businesses to deliver a more seamless and personalized customer experience by providing customers with multiple ways to interact with the brand.

3. Enhanced tracking and measurement: Multichannel marketing allows businesses to track the performance of their marketing efforts across multiple channels and gather valuable data about their customers.

4. Increased conversions: By providing customers with multiple ways to engage with a brand, businesses can increase the likelihood of converting leads into customers.

5. Greater flexibility: Multichannel marketing allows businesses to adjust their marketing efforts and pivot to different channels as needed, depending on the needs and preferences of their target audience.

OR

1. Extend your audience reach with multichannel marketing

2. Simplify the customer journey using a multichannel marketing model

3. Take advantage of the benefits different channels have to offer

4. Enhance the success of your retargeting campaigns through multichannel marketing

5. Turn leads into conversions by utilizing each channel's advantages

(c) Discuss various media and channels of marketing **07**

There are several different media and channels that can be used for marketing, including:

1. Print media: This includes traditional print channels, such as newspapers, magazines, and brochures.

2. Television and radio: These channels allow businesses to reach a wide audience through television and radio commercials.

3. Digital media: This includes online channels, such as social media, websites, and email marketing. Digital media allows businesses to reach and interact with customers in real-time and track the effectiveness of their marketing efforts.

4. Out-of-home advertising: This includes advertising placed in public spaces, such as billboards, bus shelters, and transit stations.

5. Events and experiential marketing: This include marketing efforts that involve creating memorable experiences for customers, such as trade shows, product demonstrations, and promotional events.

6. Public relations: This includes efforts to manage and improve a company's reputation through media relations, crisis management, and corporate social responsibility.

7. Direct mail: This includes marketing efforts that involve sending promotional materials directly to customers, such as newsletters, catalogs, and postcards.

By using a mix of these and other media and channels, businesses can reach and engage with their target audience and effectively promote their products or services.

OR

Q.5 **(a)** Write down the steps to create web analytics report. **03**

1. Data collection
2. Data processing
3. Data analysis
4. Data visualization
5. Report creation
6. Report distribution
7. Ongoing monitoring and analysis

(b) Explain features of email marketing **04**

Email marketing is a form of digital marketing that involves sending marketing messages to a group of subscribers via email. Some of the features of email marketing include:

1. Targeted messaging: Email marketing allows businesses to segment their subscribers into different groups and send targeted messages based on their interests and preferences.

2. Personalization: Email marketing allows businesses to personalize their messages by including the recipient's name, location, and other relevant information.

3. Analytics and tracking: Email marketing tools typically include analytics and tracking features, such as the ability to track the number of opens, clicks, and conversions. This allows businesses to measure the effectiveness of their email campaigns.

4. Mobile optimization: Email marketing campaigns should be optimized for mobile devices, as many people access their emails on their phones.

5. Integration with other marketing channels: Email marketing can be integrated with other marketing channels, such as social media and website analytics, to provide a more comprehensive view of the customer journey.

6. Automation: Email marketing campaigns can be automated, allowing businesses to schedule and send messages in advance and trigger messages based on certain actions or events.

(c) Explain OSI Model with all layers in detail. **07**

The OSI (Open Systems Interconnection) model is a framework for understanding how communication occurs between computers and devices. It was developed by the International Organization for Standardization (ISO) as a way to standardize communication protocols and promote interoperability between different systems and devices.

The OSI model divides the communication process into seven distinct layers, each with its own specific functions and protocols. These layers are the physical layer, data link layer, network layer, transport layer, session layer, presentation layer, and application layer.

The OSI model is hierarchical, with each layer building upon the functions of the lower layers. For example, the application layer relies on the functions of the lower layers to transmit data, while the physical layer is responsible for transmitting raw data over a communication channel.

The OSI model is a theoretical model that provides a standard framework for understanding how communication occurs between computers and devices. It is not a strict protocol, but rather a guide for understanding the different functions and protocols involved in communication.

layers are:

1. Physical layer: The physical layer is responsible for transmitting raw data over a communication channel. It defines the electrical, mechanical, and functional characteristics of the communication medium, such as cables and connectors.

2. Data link layer: The data link layer is responsible for creating a reliable link between devices and ensuring that data is transmitted correctly. It performs error detection and correction and controls the flow of data between devices.

3. Network layer: The network layer is responsible for routing data between devices and networks. It uses logical addressing to determine the path that data should take and can also provide quality of service (QoS) for different types of data.

4. Transport layer: The transport layer is responsible for end-to-end communication between devices. It provides reliability and error control for transmitted data and can also segment and reassemble data for efficient transmission.

5. Session layer: The session layer is responsible for establishing, maintaining, and terminating connections between devices. It enables devices to communicate and exchange data in a structured manner.

6. Presentation layer: The presentation layer is responsible for formatting and encoding data for transmission and ensuring that it can be understood by the receiving device. It can also provide encryption and compression for transmitted data.

7. Application layer: The application layer is the highest layer in the OSI model and is responsible for enabling application programs to access network resources and services. It provides the interface between the application and the network and defines protocols for communication between devices.

By dividing the communication process into these distinct layers, the OSI model provides a standard framework for understanding how communication occurs between computers and devices.

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Q.1 (a)   What is cyber-attack? List out different types of cyber-attacks.   **03**

A cyber-attack is a deliberate attempt to compromise the security of a computer system, network, or device in order to steal or destroy data, gain unauthorized access, or disrupt services. Cyber-attacks can take many forms and can be launched by a variety of actors, including hackers, nation-states, and organized crime groups.

Here are some examples of different types of cyber-attacks:

1. Malware

2. Phishing

3. Denial of service (DoS) attack:

4. SQL injection

5. Man-in-the-middle (MitM) attack

(b)   What is the importance of cyber security matrices?   **04**

Cybersecurity matrices are tools that are used to assess the level of cybersecurity risk faced by an organization. They provide a framework for evaluating an organization's cybersecurity posture and identifying areas where improvement is needed. Cybersecurity matrices are important because they help organizations to:

1. Identify vulnerabilities: Cybersecurity matrices can help organizations to identify vulnerabilities and weaknesses in their cybersecurity posture, such as outdated software, unsecured networks, or insufficient access controls.

2. Evaluate risk: Cybersecurity matrices can be used to evaluate the level of risk posed by different vulnerabilities and threats, and to prioritize the implementation of controls to mitigate these risks.

3. Monitor and assess progress: Cybersecurity matrices can be used to track and assess progress in improving an organization's cybersecurity posture over time. This can help to ensure that the organization is continuously improving its defenses and staying ahead of emerging threats.

4. Communicate risk: Cybersecurity matrices can be used to communicate the level of risk faced by an organization to stakeholders, such as management, employees, and external partners. This can help to ensure that everyone is aware of the importance of cybersecurity and is working to protect the organization's assets and data.

(c) Explain strategies for developing suitable information security policies for organization. **07**

Developing suitable information security policies is an important step in protecting an organization's sensitive data and assets. Here are some strategies for developing such policies:

1. Identify the organization's critical assets: The first step in developing information security policies is to identify the organization's critical assets, such as its data, systems, and networks. This will help to determine which policies and controls are necessary to protect these assets.

2. Conduct a risk assessment: A risk assessment can help to identify potential threats and vulnerabilities that could compromise the organization's critical assets. This can inform the development of policies that address specific risks and protect against potential breaches.

3. Involve all stakeholders: It is important to involve all stakeholders in the development of information security policies, including employees, management, and external partners. This will help to ensure that the policies are effective and supported by all relevant parties.

4. Review and update policies regularly: Information security policies should be reviewed and updated on a regular basis to ensure that they remain relevant and effective in protecting the organization's critical assets. This may involve reviewing new threats and vulnerabilities, as well as changes to the organization's business practices or systems.

5. Communicate policies clearly: Information security policies should be communicated clearly to all relevant parties, including employees, management, and external partners. This can help to ensure that everyone understands their responsibilities and is aware of the appropriate measures to take in order to protect sensitive data and assets.

Q.2 (a) Explain behavior analysis. **03**

Behavior analysis involves collecting data on an individual's behavior in order to understand and predict how they will behave in different situations. This data can be collected through a variety of methods, including observation, self-report, and measurement.

Behavior analysis is often used to understand and treat a range of psychological and behavioral issues, including phobias, anxiety disorders, and substance abuse. It is also used in fields such as education and business, where it can help to understand and influence the behavior of employees or customers.

Some of the key principles of behavior analysis include the following:

1. Behavior is shaped by its consequences: Behavior is influenced by the consequences that follow it, such as reinforcement or punishment.

2. Learning occurs through the process of reinforcement: Learning occurs when an individual's behavior is followed by a reinforcing consequence, such as a reward or positive feedback.

3. Behavior can be changed through the manipulation of consequences: The consequences that follow a behavior can be manipulated to encourage or discourage that behavior.

4. Behavior is shaped by the environment: The environment plays a significant role in shaping behavior, as it provides the stimuli that elicit responses and the consequences that reinforce or punish behavior.

(b)   Give the difference between internal search and external search.   **04**

Internal search refers to the search functionality provided on a website or other online platform that allows users to search for specific content within that platform. This is often provided through a search bar or box on the website, and it searches only the content that is available on that particular site.

External search, on the other hand, refers to searching the entire World Wide Web using a search engine, such as Google, Bing, or Yahoo. External search allows users to search for content from multiple websites and sources, rather than just the content that is available on a single site.

Feature	Internal Search	External Search
Scope	Single site	Entire web
Relevance	High	Low
Control	Website owner	Search engine
Privacy	High	Low
Customization	High	Low
Access to external content	Low	High

(c)   Explain the importance of web analytics.   **07**

Web analytics is the process of collecting, analyzing, and reporting on data from a website or other online platform in order to understand and optimize the user experience. It is an important tool for businesses, as it helps them understand how users interact with their website and provides insights into how to improve the user experience.

Here are some specific reasons why web analytics is important:

1. Improve website performance: Web analytics can help you understand how users interact with your website, including which pages they visit, how long they stay on each page, and which actions they take. This can help you identify areas of your website that are performing poorly and make improvements to increase engagement and conversion rates.

2. Understand customer behavior: Web analytics can provide insights into how customers use your website, including which products or services they are interested in, what their goals are, and how they navigate through your site. This can help you tailor your marketing and sales efforts to better meet the needs of your customers.

3. Identify opportunities for growth: Web analytics can help you identify areas of your website that are performing well, as well as opportunities for growth and expansion. For example, you may discover that a particular product or service is particularly popular with your customers, which could inform your future marketing and product development efforts.

4. Make data-driven decisions: Web analytics provides data and insights that can help you make informed decisions about your website and online presence. Rather than relying on assumptions or gut feelings, you can use data to understand what is working and what is not, and make decisions

based on that information.

5. Monitor and optimize marketing efforts: Web analytics can help you understand the effectiveness of your marketing efforts and optimize your campaigns. For example, you can use web analytics to track the success of a particular email campaign or social media advertising effort, and make adjustments based on the data you see.

OR

(c) Explain OSI reference model. **07**

Q.3 (a) Explain Data capturing for web analytics. **03**

Data capturing for web analytics refers to the process of collecting and storing data from websites and other online platforms in order to perform analysis and gain insights. There are several different methods for capturing data for web analytics, including:

1. Server log files: Web servers generate log files that record information about each request made to the server. These log files can be analyzed to understand the traffic patterns on a website and identify any issues or errors.

2. Tracking tags: Tracking tags, also known as "web beacons" or "tracking pixels," are small pieces of code that are embedded in a website or email and used to track user behavior. When a user visits a website or opens an email, the tracking tag sends data back to the analytics platform, which can be used to understand how users interact with the website or email.

3. JavaScript tracking: JavaScript is a programming language that is commonly used to add interactive elements to websites. JavaScript tracking involves using JavaScript code to collect data about user behavior on a website and send it back to the analytics platform.

4. APIs: APIs, or application programming interfaces, allow different systems to communicate with each other and exchange data. APIs can be used to collect data from a variety of sources, such as social media platforms or mobile apps, and send it to the analytics platform for analysis.

5. Data warehouses: A data warehouse is a centralized repository for storing data from multiple sources. Data can be extracted from different sources and loaded into the data warehouse, where it can be cleaned and transformed before being analyzed.

(b) What are the disadvantages of Streaming Analytics? **04**

Streaming analytics can have several disadvantages, including:

Complexity: Building and maintaining a streaming analytics system can be complex, as it involves dealing with large amounts of data in real-time, and often requires specialized knowledge and expertise.

Scalability: Streaming analytics systems can be challenging to scale, as they need to be able to handle an increasing volume of data without a decrease in performance.

Latency: Some streaming analytics systems can have high latency, which means that there may be a delay between the time data is received and when it is processed and made available for analysis.

Cost: Setting up and maintaining a streaming analytics system can be expensive, as it requires specialized hardware and software, as well as skilled personnel to manage it.

Data Quality: Streaming analytics systems rely on the quality of the data they receive in order to produce accurate results. If the data is of poor quality or contains errors, the results of the analysis may also be inaccurate.

(c)   Explain SEO and its working.   **07**

SEO, or Search Engine Optimization, is the process of improving the ranking of a website or web page in search engine results pages (SERPs) in order to increase the visibility and traffic to the site. SEO is accomplished through a variety of techniques, including optimizing the content and structure of a website, building high-quality backlinks, and ensuring that the website is accessible and crawlable by search engines.

Here is an overview of how SEO works:

1. Search engines use algorithms to crawl and index web pages: Search engines use special algorithms to crawl the web and index web pages. These algorithms are designed to understand the content and structure of a webpage, as well as the relevance of the content to specific search queries.

2. SEO techniques are used to optimize websites: SEO techniques are used to

improve the ranking of a website in search engine results pages. These techniques include optimizing the content and structure of the website, building high-quality backlinks, and ensuring that the website is accessible and crawlable by search engines.

3. Search engines use ranking algorithms to determine the relevance and quality of websites: Search engines use ranking algorithms to determine the relevance and quality of websites based on a variety of factors, such as the content of the website, the number and quality of backlinks, the structure and organization of the website, and the user experience.

4. Websites with higher rankings appear higher in search results: Websites that are ranked higher by search engines will appear higher in search results, which can lead to increased traffic and visibility for the site.

5. Ongoing optimization is required to maintain good rankings: SEO is an ongoing process, as search engines are constantly updating and refining their algorithms. As a result, it is important to continuously optimize a website in order to maintain good rankings and stay competitive in search results.

OR

Q.3 (a)   What is trust and security in E-commerce website?   **03**

Trust and security are important considerations for e-commerce websites, as they play a crucial role in building customer confidence and ensuring the success of the business. Trust and security can be established in a number of ways, including:

1. Using secure connections: E-commerce websites should use secure connections, such as HTTPS, to protect the privacy and security of customer data. This helps to prevent data from being intercepted or compromised during transmission.

2. Protecting customer data: E-commerce websites should have robust measures in place to protect customer data from unauthorized access or theft. This includes encrypting sensitive data, using secure servers, and implementing strict access controls.

3. Ensuring website security: E-commerce websites should be regularly monitored and tested for vulnerabilities to ensure that they are secure and free from threats, such as malware or hackers.

4. Providing clear privacy policies: E-commerce websites should have clear and concise privacy policies that outline how customer data will be collected, used, and protected. This helps to build trust and confidence with customers.

5. Displaying trust seals: Trust seals, such as the Better Business Bureau (BBB) logo or the Verified by Visa logo, can help to establish trust with customers by demonstrating that the website has been independently reviewed and found to be reputable.

By taking these measures, e-commerce websites can build trust and security with customers and create a safe and secure online shopping experience.

(b)   What is PPC? Describe the factors affecting on PPC.   **04**

PPC, or pay-per-click, is a type of online advertising in which advertisers pay a fee each time one of their ads is clicked. PPC allows advertisers to bid on specific keywords or phrases that are related to their products or services, and the ads are displayed to users who search for those terms on a search engine or other platform.

There are several factors that can affect the success of a PPC campaign, including:

1. Keyword selection: Choosing the right keywords is crucial for a successful PPC campaign, as it determines which users will see the ads. Advertisers should select keywords that are relevant to their products or services and that have a high search volume in order to reach the right audience.

2. Ad relevance: Ad relevance is the degree to which an ad is related to the keywords that were used to trigger it. Ads that are more relevant to the keywords are more likely to be clicked, and they may also have a higher quality score, which can help to lower the cost of the campaign.

3. Ad placement: The position of an ad on a search engine results page can also affect its performance. Ads that are higher up on the page are more likely to be clicked, but they may also be more expensive to bid on.

4. Budget: The budget for a PPC campaign can also affect its success. Advertisers should carefully manage their budget to ensure that they are getting a good return on investment, while also ensuring that they have sufficient resources to reach their target audience.

5. Landing page experience: The quality of the landing page, or the page that users are directed to when they click on an ad, can also affect the success of a PPC campaign. Landing pages should be relevant to the ad and provide a good user experience in order to maximize the chances of a conversion.

(c)   Explain any three analytic tools.   **07**

There are many different analytics tools available, each with its own unique

features and capabilities. Here are three examples of popular analytics tools:

1. Google Analytics: Google Analytics is a free web analytics service offered by Google that tracks and reports website traffic. It provides a range of features, including the ability to track website traffic, conversions, and user behavior.

2. Adobe Analytics: Adobe Analytics is a cloud-based analytics platform that provides insights into customer behavior across multiple channels, including websites, mobile apps, and social media. It offers a range of features, including the ability to track and analyze customer journeys, segmentation, and predictive analytics.

3. Mixpanel: Mixpanel is a real-time analytics platform that allows businesses to track and analyze user actions within their apps and websites. It provides a range of features, including the ability to track user behavior, understand user flows, and identify trends and insights.

Q.4 (a)   Explain three layers of 'SO WHAT TEST'.   **03**

The SO WHAT test is a tool that is used to evaluate the value and impact of a data analytics project. It consists of three layers:

1. Relevance: The first layer of the SO WHAT test is relevance, which refers to the importance of the data and the insights it provides. This layer helps to ensure that the data being analyzed is meaningful and relevant to the problem or question being addressed.

2. Actionability: The second layer of the SO WHAT test is actionability, which refers to the ability to take action based on the insights provided by the data. This layer helps to ensure that the insights being generated are useful and can be used to inform decision-making or drive change.

3. Impact: The third layer of the SO WHAT test is impact, which refers to the potential impact or value of the insights generated by the data. This layer helps to ensure that the data analytics project is worth the time and resources invested in it, and that it will lead to tangible results.

The SO WHAT test is a useful tool for evaluating the value and impact of data analytics projects and ensuring that they are aligned with the needs and goals of the organization.

(b)   What is email marketing? Explain its fundamentals.   **04**

Email marketing is a form of digital marketing that involves sending marketing messages or advertisements to a group of people via email. It is a cost-effective way to reach a large audience and can be a powerful tool

for building relationships with customers, promoting products or services, and driving conversions.

Here are some fundamentals of email marketing:

1. Targeted audience: Email marketing is most effective when it is targeted to a specific audience, rather than being sent to a general list of email addresses. This may involve segmenting the email list based on demographics, interests, or past behavior.

2. Relevant content: The content of an email marketing campaign should be relevant to the target audience and aligned with the goals of the campaign. This may involve promoting specific products or services, providing valuable content or resources, or offering special deals or promotions.

3. Personalization: Personalization can be a powerful tool in email marketing, as it helps to make the content more relevant and engaging to the recipient. This may involve using the recipient's name, location, or past behavior to tailor the content of the email.

4. Call to action: Email marketing campaigns should include a clear call to action, such as a button or link, that encourages the recipient to take a specific action, such as making a purchase or visiting a website.

(c)   Explain Black-Hat SEO Technique.   **07**

Black-hat SEO techniques are tactics that are used to manipulate search engine rankings in ways that violate the terms of service of the search engines. These techniques are designed to trick search engines into ranking a website higher in search results, and they are often used by unscrupulous individuals or companies who are looking to gain an unfair advantage over their competitors.

Here are some examples of black-hat SEO techniques:

1. Keyword stuffing

2. Cloaking

3. Link spamming

4. Doorway pages

5. Hidden text or links

6. Article spinning

7. Duplicate content

8. Meta tag stuffing

9. Negative SEO

10. Link farming

11. Sneaky redirects

12. Spamming blog comments or forums

13. Buying or selling links

14. Scraping content from other websites

1. Keyword stuffing: Keyword stuffing involves cramming a website with irrelevant or hidden keywords in an attempt to manipulate search rankings. This can result in poor user experience and can be detected by search engines, leading to penalties or even a ban.

2. Cloaking: Cloaking involves presenting different content to search engines and users in an attempt to manipulate rankings. For example, a website might show search engines one version of a page with relevant keywords, while showing users a completely different version of the page.

3. Link spamming: Link spamming involves creating or buying links from low-quality or irrelevant websites in an attempt to manipulate search rankings. This can result in poor user experience and can be detected by search engines, leading to penalties or a ban.

4. Doorway pages: Doorway pages are low-quality pages that are created specifically for the purpose of ranking high in search results and redirecting users to another page. These pages are often filled with irrelevant or spammy content and can be detected by search engines, leading to penalties or a ban

OR

Q.4 (a)   Write short note on email automation concept.   **03**

Email automation refers to the process of using technology to automatically send and receive emails. It involves creating rules or triggers that determine when and how emails are sent and received, as well as defining the content of the emails.

There are many benefits to using email automation, including increased efficiency and productivity, as well as the ability to personalize and target emails to specific audiences. It can also be used to automate follow-up emails and reminders, as well as to send newsletters and other bulk emails.

To implement email automation, businesses typically use email marketing

software that allows them to design and schedule emails, as well as track and analyze the results of their email campaigns.

(b)   Explain A/B Testing.   **04**

A/B testing, also known as split testing, is a method of comparing two versions of a product or marketing campaign to determine which performs better. It involves randomly assigning a group of people to receive one version (the "A" group) and another group to receive the other version (the "B" group). The performance of the two versions is then compared based on a predetermined metric, such as click-through rate or conversion rate.

A/B testing is commonly used in the field of marketing to optimize websites, emails, and other marketing campaigns. It allows businesses to make informed decisions about which version of a product or campaign is most effective and to continuously improve their marketing efforts.

A/B testing can be a powerful tool for improving the performance of a product or campaign, but it is important to design the test properly and to have a large enough sample size to ensure statistical significance. It is also important to consider external factors that may impact the results, such as the timing of the test or the specific audience being targeted.

(c)   Explain SEO-KPI.   **07**

SEO-KPI, or Search Engine Optimization Key Performance Indicators, are metrics used to measure the effectiveness of an organization's SEO efforts. These indicators help organizations track the progress of their SEO strategy and identify areas where they can improve.

There are many different SEO-KPIs that organizations can track, including:

1. Search engine rankings: The position of a website in the search engine results pages (SERPs) for specific keywords.

2. Traffic: The number of visitors to a website from search engines.

3. Conversion rate: The percentage of visitors to a website who take a desired action, such as making a purchase or filling out a form.

4. Click-through rate (CTR): The percentage of users who click on a website's link in the search engine results pages.

5. Bounce rate: The percentage of visitors who leave a website after viewing only one page.

6. Time on site: The amount of time a visitor spends on a website.

7. Backlinks: The number of external websites that link to a website.

By tracking these and other SEO-KPIs, organizations can gain insights into the effectiveness of their SEO strategy and make data-driven decisions to improve their search engine rankings and drive traffic to their website.

Q.5 (a)   Explain web master.   **03**

A webmaster is a person responsible for maintaining a website. This can include tasks such as updating content, ensuring that the website is functioning properly, monitoring the website's performance, and ensuring that the website is optimized for search engines.

Webmasters may also be responsible for managing the website's domain name and hosting, as well as implementing security measures to protect the website from cyber threats. In addition, they may work with web developers to design and improve the website's user experience.

Webmasters may work in-house for a company or organization, or they may be freelance or work for a web design or digital marketing agency. Some webmasters also have a background in computer science or web development.

(b)   List and explain E-Commerce Models.   **04**

There are several different models that businesses can use for e-commerce, including:

1. Business-to-consumer (B2C) model: This model involves businesses selling directly to consumers over the internet. Examples include online retail stores, such as Amazon or eBay.

2. Consumer-to-consumer (C2C) model: This model involves consumers selling directly to other consumers over the internet. Examples include online marketplaces such as Etsy or eBay.

3. Business-to-business (B2B) model: This model involves businesses selling products or services to other businesses over the internet. Examples include wholesalers or manufacturers selling to retailers.

4. Consumer-to-business (C2B) model: This model involves consumers selling products or services to businesses over the internet. Examples include freelance professionals or individuals selling products or services on platforms such as Upwork or Etsy.

5. Business-to-administration (B2A) model: This model involves businesses providing services or products to government agencies or other organizations. Examples include companies providing software or

consulting services to government agencies.

6. Consumer-to-administration (C2A) model: This model involves consumers interacting with government agencies or other organizations over the internet. Examples include individuals filing taxes or applying for government benefits online.

(c) Explain the difference types of websites. **07**

There are several different types of websites that serve different purposes:

1. Informational websites: These websites provide information on a particular topic or issue. They may include articles, news, research, and other types of content.

2. E-commerce websites: These websites allow businesses to sell products or services online. They typically include features such as shopping carts, payment processing, and product listings.

3. Blogs: These websites consist of regularly updated content, usually in the form of articles or posts. Blogs can cover a wide range of topics and may be written by individuals or organizations.

4. Social media websites: These websites allow users to connect with each other and share content, such as text, images, and videos. Examples include Facebook, Twitter, and Instagram.

5. Portfolio websites: These websites showcase the work of individuals or organizations, such as artists, photographers, or designers.

6. News websites: These websites provide news and information on current events and issues.

7. Educational websites: These websites provide educational resources, such as online courses, tutorials, and information on a particular subject.

8. Government websites: These websites provide information and resources related to government agencies and services.

9. Nonprofit websites: These websites provide information and resources related to nonprofit organizations and their causes.

OR

Q.5 (a) How to create web analytics report? **03**

To create a web analytics report, you will need to follow these steps:

1. Set up web analytics tracking: To collect data on your website, you will need to install a web analytics tool on your website. This will allow you to track the traffic, behavior, and performance of your website.

2. Define your objectives: Determine what you want to achieve with your web analytics report, such as increasing website traffic or improving conversion rates.

3. Choose your metrics: Select the key performance indicators (KPIs) that you will use to measure the success of your website, such as page views, bounce rate, or conversion rate.

4. Collect and analyze data: Use your web analytics tool to gather data on your website's performance. You can then use this data to identify trends and patterns, and to compare the performance of different pages or campaigns.

5. Create the report: Use a spreadsheet or reporting software to organize and present your data in a clear and visually appealing way. Be sure to include relevant charts, graphs, and tables to help illustrate your findings.

6. Share the report: Share your web analytics report with relevant stakeholders, such as your marketing team or upper management. Make sure to include recommendations for how to improve the performance of your website based on your findings.

(b)   Explain the components of successful email marketing.   **04**

There are several key components that contribute to the success of an email marketing campaign:

1. A targeted email list: To ensure the success of an email marketing campaign, it is important to have a targeted email list of individuals who are interested in your products or services. This can be achieved through email list building efforts, such as offering incentives for subscribers or using sign-up forms on your website.

2. Engaging subject lines: The subject line of an email is often the first thing that a recipient sees, so it is important to create a subject line that is attention-grabbing and compelling.

3. Personalization: Personalizing emails by using the recipient's name or other personal information can help increase the likelihood that the email will be opened and read.

4. Relevant content: The content of the email should be relevant and interesting to the recipient. It should also be well-written and visually appealing.

5. A clear call to action: The email should include a clear and compelling call

to action, such as "Sign up for our newsletter" or "Buy now."

6. Mobile-friendly design: With the increasing number of people accessing emails on their smartphones, it is important to ensure that your emails are mobile-friendly and easy to read on small screens.

7. Testing and optimization: To continually improve the effectiveness of your email marketing campaigns, it is important to test different elements of the email, such as subject lines, content, and calls to action, and to use data to optimize your campaigns based on what works best.

(c)   Explain the process of website testing.   **07**

Website testing is the process of evaluating a website to identify and fix any issues or problems. It is an important step in the development process, as it helps ensure that the website is functional, user-friendly, and performs well.

There are several steps involved in the website testing process:

1. Define testing goals and objectives: Determine what you want to achieve with your website testing, such as identifying and fixing bugs or improving the user experience.

2. Identify the target audience: Determine who will be using the website, as this will help inform the testing process and ensure that the website meets the needs of its intended users.

3. Plan the test: Develop a detailed plan for how the testing will be conducted, including what will be tested, how it will be tested, and who will be responsible for conducting the tests.

4. Set up the testing environment: Set up the necessary tools and resources for conducting the tests, such as testing software and devices.

5. Conduct the tests: Follow the testing plan and conduct the tests according to the specified criteria. Make sure to document any issues or problems that are identified.

6. Analyze the results: Review the results of the tests and identify any problems or areas for improvement.

7. Fix any issues: Address any problems or issues identified during the testing process by making the necessary changes to the website.

8. Retest: After making changes to the website, it is important to retest to ensure that the issues have been properly resolved.

By following this process, businesses can ensure that their website is fully functional and meets the needs of their target audience.

Q6. steps for performing site search analytics

Also, think of the process as an endless loop:

1. Define measurable goals and refine/adapt existing ones.
2. Analyze site search metrics.
3. Enhance your content and your site search's settings.
4. Monitor and analyze the impact of your actions.
5. Check your goals.
6. Start over.