

Times asked: **6 times**

5 times

4 times

3 times

2 times

1 time

indicates 5-mark question

% indicates questions from same topic merged

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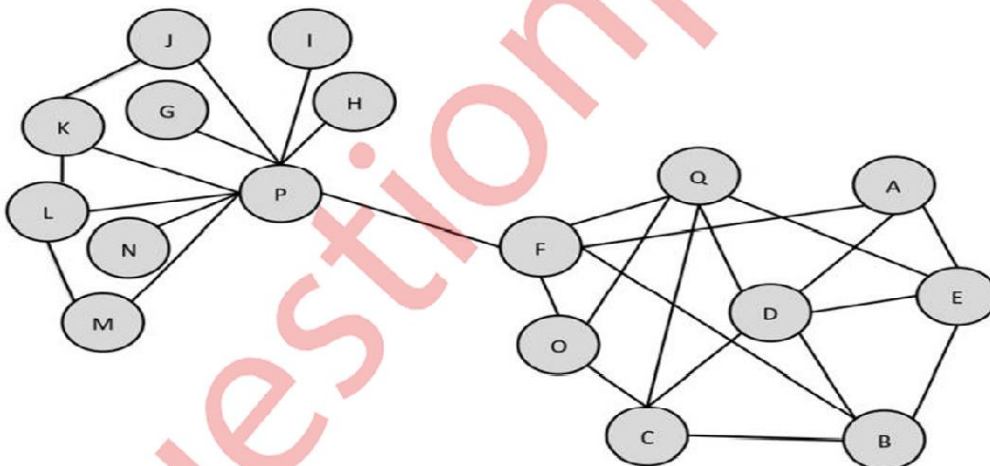
Social Media Analytics Question bank

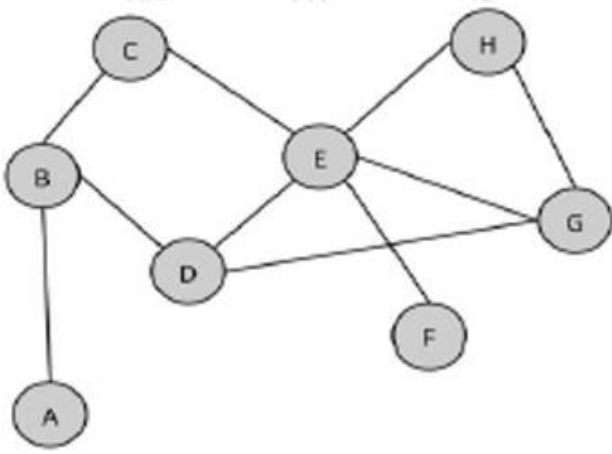
1. Social Media Analytics: An Overview

1. **Explain the major challenges of Social Media Analytics.**
2. **Explain the seven layers of Social Media Analytics with suitable examples.**

2. Social Network Structure, Measures & Visualization

3. **Explain centralization in social network analysis and its role with a suitable example. %**
4. **Explain social network visualization, including its importance, different network layouts, and scale issues. %**
5. **What is social network structure? List at least two different networks that exist within i) Facebook and ii) Instagram. For each network, answer the following:**
 - What constitutes a node?**
 - What constitutes an edge?**
 - Is it directed?**
 - Is it weighted? If so, what does the weight indicate?**
 - What is the smallest component in the graph?**
6. **Solve problems based on social network graphs:**
 - a) **How is degree distribution plotted for the graph? Show degree distribution of the following graph.**





- b)
- i. How many nodes are in the network?
 - ii. How many edges are in the network?
 - iii. Is this graph directed or undirected?
 - iv. Create an adjacency list for this graph.
 - v. Create an adjacency matrix for this graph.
 - vi. What is the length of the shortest path from node A to node F?
 - vii. What is the largest clique in this network? How many cliques of that size are there?
 - viii. How many connected components are there in this network?
 - ix. Estimate the density of the graph.
 - x. Are there any hubs in the network? If so, which node(s) and why is it a hub?

3. Social Media Text, Action & Hyperlink Analytics

7. Explain Social Media Action Analytics, including common user actions and tools used. %
8. Explain Social Media Text Analytics, its purpose, and steps involved with an example. %
9. Explain Hyperlink Analytics and its different types. #
10. Differentiate between static and dynamic social media text. #

4. Social Media Location & Search Engine Analytics

11. Explain Location Analytics, its significance in Social Media Analytics, and its data sources. %
12. Explain Search Engine Optimization (SEO), its purpose, and different methods. Illustrate with an example. %
13. Explain Search Engine Analytics and its two main categories.
14. Explain business data-driven location analytics and social media-data driven location analytics.

5. Social Information Filtering

15. Explain Social Media KPIs, their significance, and how they are used to measure business success with an example. %
16. Explain social media risk and the four steps in social media risk management.
17. Explain the steps involved in formulating a Social Media Strategy. #
18. Explain social media-based recommendation systems and their role in improving customer service with an example.

19. Differentiate between traditional recommendation systems and social media-based recommendation systems.
20. Explain Automated, Traditional, and Social Recommendation Systems.
21. Explain common social media risks mitigation strategies.

6. Social Media Analytics Applications and Privacy

22. Explain the benefits of brand building. #
23. Explain issues addressed in privacy policies and limitations of privacy policies. %

Module-wise Marks Weightage and Question Count

	1	2	3	4	5	6
2025 Aug	15 (2)	20 (2)	25 (4)	20 (2)	30 (4)	15 (2)
2025 May	20 (3)	30 (4)	20 (3)	15 (2)	30 (3)	10 (1)
2024 Dec	15 (2)	20 (4)	25 (4)	20 (3)	40 (4)	15 (2)
2024 May	15 (2)	30 (3)	25 (3)	25 (3)	35 (4)	10 (1)
2023 Dec	20 (2)	0	40 (5)	30 (3)	40 (5)	15 (2)
2023 May	20 (2)	15 (2)	25 (3)	35 (4)	35 (4)	15 (2)
Estimate	15-20 (2)	20-30 (2-3)	25 (3)	25 (3)	35 (4)	15 (2)
Total	105	115	160	145	210	80

Asked once:

1. Social Media Analytics: An Overview

1. What is predictive analysis. #

2. Social Network Structure, Measures & Visualization

2. Explain density, bridge, hub, clique, and cluster in a social network with suitable examples.
3. Differentiate among social media, Web 2.0, and social network sites.
4. Define centrality and its types. How is it computed? #

3. Social Media Text, Action & Hyperlink Analytics

5. Highlight the differences between Social Media Text Analytics and Hyperlink Analytics. #
6. Explain tools of Hyperlink analytics.
7. Write a short note on Intention analysis in social media.

4. Social Media Location & Search Engine Analytics

8. Write a short note on Privacy concerns in location analytics with examples. #
9. List all the location analytics tools and also explain working of every tool.

5. Social Information Filtering

10. Explain the process of managing misinformation risks on social media. #
11. Write a short note on Types of social media risk.

6. Social Media Analytics Applications and Privacy

12. What are the benefits of social media users who use social media? #
13. Summarize ethical issues when mining social media. #
14. Discuss various privacy attributes of Social Media sites.
15. What are the threats to privacy on social media?
16. Explain how public sector agencies can leverage social media analytics during disaster response with examples.
17. Relate different techniques to secure social media accounts.

Social Media Analytics Answer bank

indicates 5-mark question

% indicates questions from same topic merged

1. Social Media Analytics: An Overview

1. **Explain the major challenges of Social Media Analytics.**

1. Data Volume and Velocity

- Social media generates a huge amount of data continuously in the form of posts, videos, comments, and tweets.
- Handling and analyzing this data in real time becomes difficult, especially during live events.

Example: Analyzing thousands of tweets per second during a live cricket match.

2. Unstructured and Noisy Data

- Data is mostly unstructured, like images or text with slangs, abbreviations, or emojis.
- Spam, bots, and irrelevant content reduce the overall quality of data.

Example: A review like “Phone is lit but battery is trash lol” is difficult to classify clearly.

3. Data Variety (Heterogeneity)

- Social media data exists in different forms such as text, images, videos, and links.
- Combining and analyzing these different formats together is challenging.

Example: A campaign may involve tweets, Instagram posts, and YouTube videos together.

4. Data Privacy

- Users often share personal and sensitive information on social media platforms.
- Privacy laws and policies restrict how this data can be collected and used.

Example: Using user location data for targeted ads without proper permission.

5. Data Access and API Limitations

- Social media platforms provide limited access to data through APIs.
- There are restrictions on the amount and type of data that can be collected.

Example: API request limits restrict collecting large amounts of tweet data.

6. Dynamic and Evolving Nature

- Social media trends and user behaviour keep changing rapidly over time.
- Insights based on old data may quickly become outdated.

Example: A trending hashtag may lose relevance within a few days.

7. Interpretation and Context Understanding

- It is difficult to correctly understand sarcasm, tone, or hidden meaning in posts.
- The same words can have different meanings depending on context.

Example: “This update worked really well, now the app crashes” may be wrongly classified as positive.

8. Fake Data and Bot Activity

- Fake accounts and bots can generate misleading activity on social media.
- Artificial likes and comments distort actual user behaviour.
- It becomes difficult to separate genuine interactions from fake ones.

Example: A product appears popular due to automated bot comments and likes.

2. Explain the seven layers of Social Media Analytics with suitable examples.

Social Media Analytics consists of seven layers of social media data. Each layer contains valuable information that can be mined to generate business insights. Some layers are visible (like text and actions), while others are structural or hidden (like networks and hyperlinks).

The seven layers are:

1. Text Layer

- Text analytics focuses on analyzing textual content such as tweets, comments, reviews, and posts.
- It is mainly used to understand user sentiment, opinions, and trending topics.

Example: Analyzing customer reviews to detect positive or negative sentiment.

2. Network Layer

- Network analytics studies relationships and connections between users or organizations to understand how they are linked.
- It helps identify influential users and their position in the network.

Example: Finding key influencers in a Twitter network.

3. Action Layer

- Actions analytics examines user activities like likes, shares, mentions, and endorsements.
- It is used to measure engagement levels and popularity of content.

Example: A post getting many shares indicates high engagement.

4. Mobile Layer

- Mobile analytics analyzes how users interact with social media through mobile devices and apps.
- It studies app usage, in-app purchases, and user demographics for better targeting.

Example: Measuring daily active users of a shopping app.

5. Hyperlink Layer

- Hyperlink analytics studies in-links and out-links between websites and social media platforms.
- It helps understand where web traffic is coming from and which sources are important.

Example: Identifying websites that drive traffic to a company's webpage.

6. Location Layer

- Location (Geospatial) analytics analyzes geographical data of users and content.
- It helps identify region-based trends and user behaviour.

Example: Tracking posts from different cities during an event.

7. Search Engine Layer

- Search engine analytics examines search queries and historical search data.
- It helps identify trends, popular keywords, and user interests.

Example: Using search trends to predict demand for a product.

2. Social Network Structure, Measures & Visualization

3. Explain centralization in social network analysis and its role with a suitable example. %

Centralization

- It is a measure of how much a network is focused around one or a few important nodes instead of being evenly spread out.
- In a highly centralized network, a few nodes dominate, while in a decentralized network, connections are more evenly distributed.
- It shows how dependent the network is on key nodes for communication and information flow.

Role of Centralization

- It helps identify influential nodes that play a major role in spreading information across the network.
- It indicates how fast and efficiently information can travel across the network.
- Useful for strategy planning, as targeting central nodes can maximize reach and impact.

Example: Political Campaign Network

In a political campaign, most communication may happen through a single leader's official social media account. Supporters mainly follow, share, and engage with this account rather than interacting among themselves. This creates a highly centralized network where the leader acts as the main hub.

As a result:

- **Reach:** Messages spread quickly to a large audience.
- **Narrative Control:** The leader can control what information is shared and how it is presented.
- **Voter Influence:** Consistent messaging from one source strongly shapes public opinion.
- **Coordination:** Campaign updates and instructions can be communicated instantly.
- **Vulnerability:** If the leader's account fails, communication across the network is disrupted.

4. Explain social network visualization, including its importance, different network layouts, and scale issues. %

Social Network Visualization

- Social Network Visualization is the graphical representation of a network using nodes (individuals) and edges (relationships between them).
- It helps simplify complex network data into an easy-to-understand visual form.
- Makes it easier to identify patterns such as clusters, communities, and key nodes.

Importance of Social Network Visualization

- Helps in identifying influential nodes, communities, and hidden patterns in the network.
- Improves understanding of how information flows and how users are connected.
- Useful for decision-making in areas like marketing, recommendations, and trend analysis.
- It makes complex data easier to interpret compared to raw numerical data.
- Supports better decision making by presenting data in a clear and visual format.

Network Layouts

Force-Directed Layout

- Positions nodes based on attraction and repulsion forces between them.
- Naturally forms clusters, making relationships easier to observe.

Circular Layout

- Arranges nodes in a circular form for a clean and balanced view.
- Useful for comparing relationships evenly across nodes.

Hierarchical Layout

- Organizes nodes in levels (top-down or bottom-up structure).
- Suitable for representing structured networks like organizations.

Grid Layout

- Places nodes in a grid-like structure for simple visualization.
- Useful when a uniform and organized layout is required.

Geographical Layout

- Positions nodes based on real-world geographic locations.
- Useful for analyzing location-based patterns and trends.

Scale Issues in Network Visualization

Visual Clutter

- Large networks lead to overlapping nodes and edges, making the graph difficult to read.

Loss of Detail

- Important patterns may get hidden when too much data is displayed at once.

Performance Issues

- Large networks require more time and computational power to process and display.

Overcrowding of Nodes

- Too many nodes in limited space reduces clarity and understanding.

5. What is social network structure? List at least two different networks that exist within i) Instagram and ii) Facebook. For each network, answer the following:
- i. What constitutes a node?
 - ii. What constitutes an edge?
 - iii. Is it directed?
 - iv. Is it weighted? If so, what does the weight indicate?
 - v. What is the smallest component in the graph?

// same question was asked separately for Instagram and Facebook in different papers

Social network structure refers to the way users (nodes) are connected through relationships (edges) on a platform. It helps in understanding how users interact, how communities form, and how information spreads. It also helps in identifying key influencers and important patterns within the network.

i) Instagram

Network 1: Follower–Following Network

i. What constitutes a node?

Each node represents an individual Instagram user account.

ii. What constitutes an edge?

An edge represents a “follow” relationship between two users.

iii. Is it directed?

Yes, this network is directed because following is not always mutual. A user can follow someone without being followed back.

iv. Is it weighted? If so, what does the weight indicate?

It can be considered weighted based on the level of interaction between users. Higher likes, comments, or story views can indicate stronger connection strength.

v. What is the smallest component in the graph?

The smallest component is a single user account with no followers and following no one.

Network 2: Interaction Network (Likes/Comments)

i. What constitutes a node?

Each node represents an individual Instagram user account.

ii. What constitutes an edge?

An edge represents an interaction such as a like, comment, or share.

iii. Is it directed?

Yes, it is directed. User A liking or commenting on User B's post does not mean User B does the same in return.

iv. Is it weighted? If so, what does the weight indicate?

Yes, edges are weighted based on the number of interactions. More likes or comments increase the strength of the connection.

v. What is the smallest component in the graph?

The smallest component is a single user account that has never interacted with or received any interaction from another user.

ii) Facebook

Network 1: Friend Network

i. What constitutes a node?

Each node represents an individual Facebook user account.

ii. What constitutes an edge?

An edge represents a “friendship” relationship between two users.

iii. Is it directed?

No, it is undirected because friendship on Facebook is mutual. Both users must accept the request to become friends.

iv. Is it weighted? If so, what does the weight indicate?

It can be considered weighted based on the level of interaction between users. More likes, comments, messages, or tags indicate a stronger connection.

v. What is the smallest component in the graph?

The smallest component is a single user account with no friends.

Network 2: Interaction Network (Likes/Comments/Shares)

i. What constitutes a node?

Each node represents an individual Facebook user account.

ii. What constitutes an edge?

An edge represents an interaction such as a like, comment, or share.

iii. Is it directed?

Yes, it is directed. User A interacting with User B’s post does not mean User B interacts back.

iv. Is it weighted? If so, what does the weight indicate?

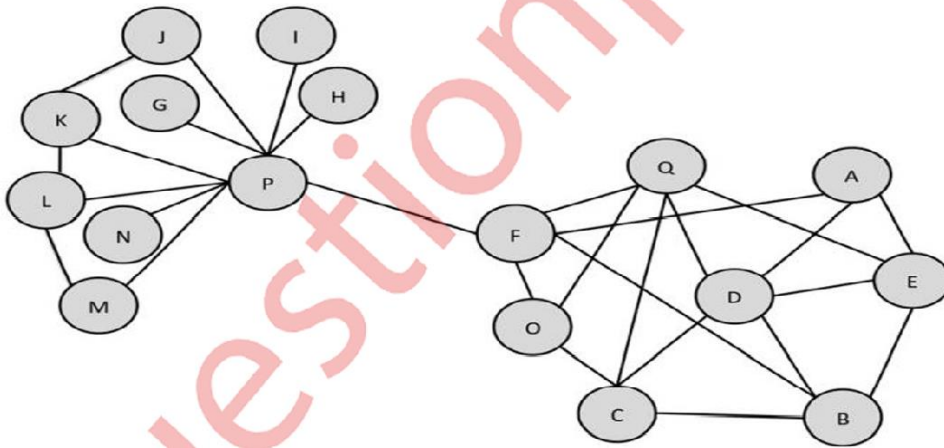
Yes, edges are weighted based on the number of interactions. More likes, comments, or shares increase the strength of the connection.

v. What is the smallest component in the graph?

The smallest component is a single user account that has never interacted with or received any interaction from another user.

6. Solve problems based on social network graphs:

a) How is degree distribution plotted for the graph? Show degree distribution of the following graph.



Degree distribution shows how many nodes in a network have a particular degree.

Steps to plot degree distribution:

1. Calculate the degree of each node (number of connections).
2. Count how many nodes have degree 1, 2, 3, etc.
3. Create a table:
 - o X-axis → Degree (k)
 - o Y-axis → Number of nodes having that degree (P(k))
4. Plot the graph with:
 - o Degree on horizontal axis.
 - o Frequency on vertical axis.

Step 1: Degree of Each Node

Node	Degree
A	3
B	4
C	4
D	5
E	4
F	5
G	1
H	1
I	1

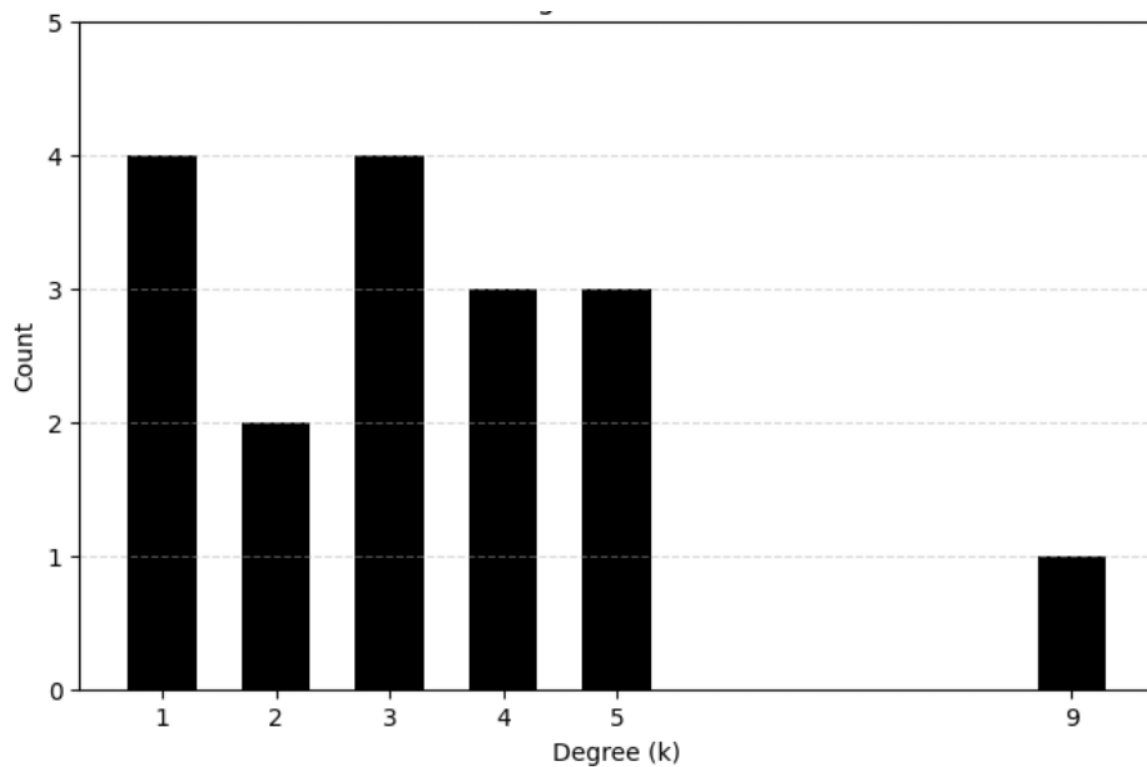
J	2
K	3
L	3
M	2
N	1
O	3
P	9
Q	5

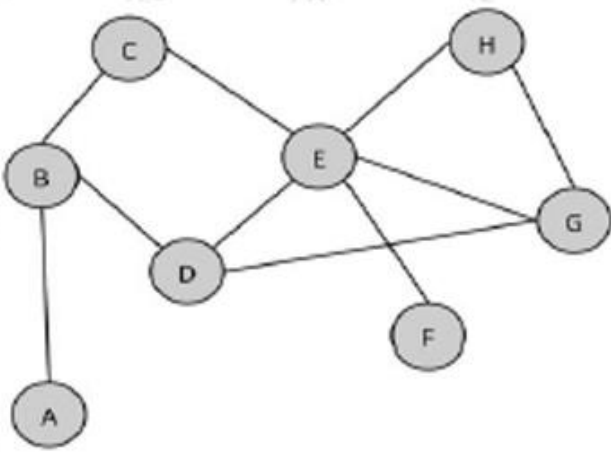
Step 2: Degree Distribution Table

Now count how many nodes have each degree.

Degree (k)	Number of Nodes
1	4
2	2
3	4
4	3
5	3
9	1

Step 3: Bar Graph Representation





- b)
- i. How many nodes are in the network?
 - ii. How many edges are in the network?
 - iii. Is this graph directed or undirected?
 - iv. Create an adjacency list for this graph.
 - v. Create an adjacency matrix for this graph.
 - vi. What is the length of the shortest path from node A to node F?
 - vii. What is the largest clique in this network? How many cliques of that size are there?
 - viii. How many connected components are there in this network?
 - ix. Estimate the density of the graph.
 - x. Are there any hubs in the network? If so, which node(s) and why is it a hub?

i. Number of Nodes

There are **8 nodes**: A, B, C, D, E, F, G, H

ii. Number of Edges

The edges are: A-B, B-C, B-D, C-E, D-E, D-G, E-G, E-H, E-F, G-H

There are **10 edges**.

iii. Directed or Undirected

The graph is **undirected** since there are no arrows on any of the edges, meaning connections go both ways.

iv. Adjacency List

- A → B
- B → A, C, D
- C → B, E
- D → B, E, G
- E → C, D, G, H, F
- F → E
- G → D, E, H
- H → E, G

v. Adjacency Matrix

	A	B	C	D	E	F	G	H
A	0	1	0	0	0	0	0	0
B	1	0	1	1	0	0	0	0
C	0	1	0	0	1	0	0	0
D	0	1	0	0	1	0	1	0
E	0	0	1	1	0	1	1	1
F	0	0	0	0	1	0	0	0
G	0	0	0	1	1	0	0	1
H	0	0	0	0	1	0	1	0

vi. Shortest Path from A to F

A → B → D → E → F & A → B → C → E → F

Length = **4 edges**

vii. Largest Clique

A clique is a fully connected group.

Largest size = **3 nodes**

Cliques: {D, E, G} & {E, G, H}

Size = 3, Number of such cliques = 2

viii. Connected Components

All nodes are reachable from each other through some path. Therefore there is only **1 connected component**.

ix. Density

Formula: $\text{Density} = 2 \times \text{Edges} / (\text{Nodes} \times (\text{Nodes} - 1))$

$$\text{Density} = 2 \times 10 / 8 \times 7$$

$$= 20 / 56 = \mathbf{0.357}$$

This means about 35.7% of all possible connections actually exist.

x. Hubs in the Network

Node E is a hub.

A hub is a node with the highest connections.

Node E has the highest degree in the network with 5 connections (C, D, F, G, H). It sits at the center of the network and acts as the main connector between multiple nodes, making it the clear hub of this network.

3. Social Media Text, Action & Hyperlink Analytics

7. Explain Social Media Action Analytics, including common user actions and tools used. %

Social Media Action Analytics

- It involves collecting and analyzing user actions such as likes, shares, mentions, clicks, and views to understand how users interact with content.
- These actions help measure engagement, popularity, influence, and overall user behaviour on social media platforms.
- It is widely used for business purposes such as performance tracking, campaign evaluation, and predicting future trends.

Common Social Media Actions

1. Like

- A positive reaction given by users to show approval or interest in content, it is commonly used as a measure of popularity.
- Example: Number of likes on a Facebook product post.

2. Dislike

- A negative reaction that indicates dissatisfaction or disagreement with the content shared on social media.
- Example: Dislikes on a YouTube video.

3. Share

- An action that allows users to distribute content to others, increasing its reach and visibility across networks.
- Example: Sharing a promotional post on Instagram.

4. Views

- The number of times a piece of content such as a video, post, or page is seen by users, indicating exposure level.
- Example: Total views of a YouTube video.

5. Clicks

- The action of selecting a hyperlink, which helps analyze user navigation behaviour and website traffic.
- Example: Clicking on a brand's promotional link.

6. Mentions

- The occurrence of a brand, product, or person's name in social media content, showing discussion and visibility.
- Example: Using "@BrandName" in a tweet.

7. Tagging

- The act of attaching keywords or linking users to content to improve identification, classification, and searchability.
- Example: Tagging a friend in a Facebook photo.

Tools Used for Action Analytics (asked once)

1. Google Analytics

- Tracks user behaviour such as clicks, traffic, and conversions from social media.
- Helps measure the effectiveness of campaigns and user engagement on websites.

2. Hootsuite

- Monitors social media engagement like likes, shares, and comments across platforms.
- Provides dashboards and reports for performance tracking and scheduling.

3. Facebook Insights

- Provides data on user interactions such as likes, reach, and engagement on Facebook pages.
- Helps understand audience behaviour and improve content performance.

4. Twitter Analytics

- Tracks metrics like impressions, retweets, and profile visits on Twitter.
- Helps evaluate tweet performance and audience engagement.

8. Explain Social Media Text Analytics, its purpose, and steps involved with an example. %

Social Media Text Analytics

- It involves extracting and analyzing text from social media platforms like tweets, comments, reviews, and posts to understand user opinions.
- Helps identify patterns, sentiments, and key topics being discussed by users across different platforms.
- Used to generate business insights that support decision-making, product improvement, and marketing strategies.

Purpose of Social Media Text Analytics:

1. Sentiment Analysis

- Classifies text as positive, negative, or neutral.
- Helps businesses understand how customers feel about a product, service, or issue.

2. Intention Mining

- Identifies user intentions behind text such as buy, sell, recommend, or quit.
- Helps detect potential customers as well as users who may stop using the product.

3. Trends Mining

- Uses historical and real-time data to identify patterns and predict future events.
- Useful for predicting demand and supporting product and marketing decisions.

4. Concept Mining

- Extracts key ideas and concepts from large amounts of text data.
- Helps in understanding themes in content like blogs, reports, articles, and wiki pages.

Example

Using a hypothetical social media dataset, explain the process of extracting meaningful insights using text analytics. (May 25)

Suppose a company launches a new smartphone and collects around 1,000 tweets mentioning the product.

Sample Tweets:

- “Battery life is amazing!”
- “Camera quality is disappointing.”
- “Planning to buy this phone soon.”
- “Too expensive for this price range.”

Step 1: Data Collection

Tweets are collected using APIs based on relevant keywords or hashtags related to the product.

Step 2: Data Cleaning

Remove spam, emojis, special characters, and irrelevant words (stop words) to make the data clean and usable.

Step 3: Sentiment Analysis

Tweets are classified as positive, negative, or neutral based on their content.

Result: 60% Positive, 25% Negative, 15% Neutral.

Step 4: Intention Mining

Words like "buy," "purchase," or "switch" are identified to detect user intent.

Result: Around 20% of tweets show a clear buying intention.

Step 5: Trend / Theme Detection

Identify frequently mentioned topics such as "battery," "camera," and "price."

Step 6: Interpretation

Combine all results to generate meaningful insights for decision-making.

Insights derived:

- Overall response is positive among users.
- Camera quality is a major concern.
- Strong purchase interest among users.

These insights help the company improve product features and plan better marketing strategies.

9. Explain Hyperlink Analytics and its different types.

Hyperlink Analytics

- It is the process of collecting and analyzing hyperlinks between websites and social media platforms to understand how they are interconnected.
- It helps measure web influence, track traffic flow, and identify which sources are driving the most visitors to a site.

Types of Hyperlink Analytics

1. Hyperlink Environment Analysis

- Analyzes in-links, out-links, and co-links of websites to understand their connections.
- Helps identify where traffic is coming from and where it is directed.

2. Link Impact Analysis

- Measures the importance of a website based on how often it is linked or cited.
- A higher number of links usually indicates greater influence or authority.

3. Social Media Hyperlink Analysis

- Focuses on links shared in social media content like posts and tweets.
- Helps brands understand which posts or platforms are driving traffic to their website.

10. Differentiate between static and dynamic social media text.

Parameter	Static Text	Dynamic Text
Meaning	Stable, long-form content that does not change frequently.	Real-time, user-generated text expressing opinions or reactions.
Nature	Rarely updated or modified.	Changes frequently and is continuously updated.
Length	Generally longer and more detailed.	Usually short and concise.
Source	Comes from structured content like blogs, reports, or documents.	Comes from user interactions on social media platforms.
Purpose	Used to extract detailed information and concepts.	Used to capture real-time opinions and reactions.
Analysis Type	Mainly used for concept mining and deeper analysis.	Used for sentiment analysis, intention mining, and trend detection.
Stability	More stable and available for long-term analysis.	Less stable and may be edited or deleted quickly.
Example	Blogs, wiki pages, reports, and articles.	Tweets, comments, and product reviews.

4. Social Media Location & Search Engine Analytics

11. Explain Location Analytics, its significance in Social Media Analytics, and its data sources. %

Location Analytics

- Location analytics is the process of collecting, analyzing, and interpreting geographical data to understand where users are located and how location influences their behaviour and decisions.
- It uses tools like GPS and maps to identify patterns in user activity across different locations.
- Helps organizations make better decisions by providing insights based on where activities are happening.
- In the context of social media, it helps track where content is being created, shared, and engaged with across different parts of the world.

Significance of Location Analytics in Social Media Analytics

- **Trend Identification:** Helps identify what topics or events are popular in specific regions.
- **Targeted Marketing:** Allows businesses to deliver location-based ads and content, improving engagement.
- **Event Monitoring:** Tracks real-time activity during events, disasters, or public gatherings.
- **Customer Behaviour:** Shows how user preferences and behaviour differ across locations.
- **Competitive Analysis:** Helps identify where competitors are active and where discussions are happening.

Data Sources of Location Analytics

- **GPS Data:** Provides accurate real-time location from mobile devices.
- **Geo-tags:** Location tags added to posts, photos, or videos.
- **IP Address:** Used to estimate user location based on internet connection.
- **Check-ins:** Users share their location at specific places.
- **Maps & Sensors:** Data from mapping services and location-based applications.

Applications

- **Market Analysis:** Identify high-demand regions based on customer and sales data.
- **Location Planning:** Choose the best locations for opening stores or expanding services.
- **Recommendations:** Suggest nearby places, events, or services to users.
- **Location-Based Advertising:** Deliver location-based ads to improve relevance and engagement.

12. Explain Search Engine Optimization (SEO), its purpose, and different methods. Illustrate with an example. %

Search Engine Optimization (SEO)

- SEO is the process of improving a website's visibility on search engines like Google so that it appears higher in search results without paying for ads.
- It works by optimizing various elements of a website to make it more relevant and trustworthy in the eyes of search engines.
- It helps a website rank higher on the Search Engine Results Page (SERP), which is the list of results shown for a user's query, increasing visibility and traffic.

Purpose of SEO

- **Increase Visibility:** Helps websites appear at the top of search results, making them easier to find.
- **Improve Traffic:** Higher ranking leads to more users visiting the website.
- **Better User Reach:** Connects businesses with users actively searching for related products/services.
- **Build Trust and Credibility:** Higher-ranking websites are generally seen as more reliable by users.
- **Business Growth:** More traffic can lead to higher sales and conversions.
- **Long-Term Results:** Provides lasting benefits compared to paid ads, which stop once spending ends.

Methods of SEO

1. On-Page SEO

- Focuses on improving elements within the website such as content, headings, meta descriptions, and keywords.
- Ensures the content is clear, relevant, and well-structured so that search engines can easily understand it.

Example: Using the keyword “*best smartphones under 20000*” naturally in a product review page.

2. Off-Page SEO

- Involves activities outside the website, mainly getting backlinks from other trusted websites.
- More high-quality backlinks make the website appear more reliable and improve its ranking.

Example: A tech blog linking to your smartphone review page helps it rank higher and increase its credibility.

3. Technical SEO

- Deals with the technical aspects of a website such as loading speed, mobile-friendliness, and security.
- Helps search engines crawl and index the website smoothly without issues.

Example: Compressing images and using HTTPS to improve website speed and security.

4. Local SEO

- Focuses on improving visibility for location-based searches.
- Useful for businesses that serve customers in a specific area.

Example: A Mumbai-based restaurant optimizing its Google listing to appear in searches like “best biryani near me.”

Example: Improving Visibility of a Local Bakery in Dadar using SEO

Consider a small, local bakery in Dadar struggled with low online visibility despite having a loyal customer base. Explain how they can improve the visibility using SEO strategies? (25 May)

A small bakery in Dadar struggled with low online visibility despite having a loyal customer base. Here is how SEO helped:

- **Local SEO:** The bakery optimized their Google Business profile with their address, timings, and photos. They started appearing when users searched "best bakery in Dadar" or "fresh cakes near me."
- **On-Page SEO:** Updating the website with relevant keywords like "custom cakes Dadar" and "fresh bread Mumbai" in product descriptions and page titles, making it easier for Google to understand what they offer.
- **Off-Page SEO:** The bakery can get listed on food blogs, local directories, and review platforms. Positive reviews and backlinks from these sites increase trust and improve ranking.
- **Technical SEO:** Ensure the website loads quickly and works well on mobile devices, since most local users search from their phones.

13. Explain Search Engine Analytics and its two main categories.

Search Engine Analytics

- Search engine analytics involves analyzing data from search engines to understand how users search for information online.
- It helps businesses understand user behaviour, popular keywords, and website performance.
- It plays an important role in improving visibility, marketing strategies, and decision-making.

Main Categories of Search Engine Analytics

1. Search Engine Optimization (SEO)

- SEO is the process of improving a website's visibility on search engines like Google so that it appears higher in search results without paying for ads.
- It works by optimizing various elements of a website to make it more relevant and trustworthy in the eyes of search engines.
- It helps a website rank higher on the Search Engine Results Page (SERP), which is the list of results shown for a user's query, increasing visibility and traffic.

Example: A website uses keywords like *“best smartphones under 20000”* and gets links from popular tech blogs, helping it appear on the first page of Google.

2. Search Trend Analytics

- Search Trend Analytics focuses on analyzing the keywords and search queries users enter over time to understand what people are interested in.
- It helps identify trending topics, seasonal patterns, and changes in user behaviour across different regions.
- Tools like Google Trends help compare keyword popularity, track interest over time, and identify which regions show higher interest.
- It can also be used to monitor competitor performance and discover new opportunities based on emerging trends.

Example: If searches for *“cold coffee recipe”* suddenly increase in summer, businesses can promote related products during that time.

14. Explain business data-driven location analytics and social media-data driven location analytics.

1. Business Data-Driven Location Analytics

- Uses location data from internal business sources such as customer addresses, sales records, and transaction data.
- Helps businesses understand where their customers are located and identify patterns across different regions.
- Supports strategic decisions like selecting store locations, targeting markets, and planning services.

Tools Used

- Tools like GIS software, Google Maps, and Tableau are used to visualize and analyze location-based data.
- These tools help create maps and dashboards for better business insights.

Applications

- **Market Analysis:** Identify high-demand regions based on customer and sales data.
- **Location Planning:** Choose the best locations for opening stores or expanding services.
- **Targeted Strategy:** Plan region-specific marketing and service offerings.

Challenges

- Data may become outdated if not updated regularly.
- Integrating data from multiple business sources can be complex.

2. Social Media Data-Driven Location Analytics

- Uses location data from social media platforms such as geo-tags, GPS data, and IP addresses.
- Helps track user activity, movement, and interactions based on location.
- Useful for identifying real-time trends, popular places, and changing user behaviour.

Tools Used

- Tools like Twitter API, Google Maps, and social media analytics platforms are used to collect and analyze location data.
- These tools help track geo-tagged posts and visualize real-time user activity.

Applications

- **Recommendations:** Suggest nearby places, events, or services to users.
- **Customer Grouping:** Group users based on location for better targeting.
- **Location-Based Advertising:** Deliver location-based ads to improve relevance and engagement.

Challenges

- Data can be noisy or inaccurate due to fake or missing location information.
- Privacy concerns may limit access to user location data.

5. Social Information Filtering

15. Explain Social Media KPIs, their significance, and how they are used to measure business success with an example. %

Also asked as: Explain the ways to measure the success of a company using social media.

Social Media KPIs

- Social Media KPIs (Key Performance Indicators) are measurable metrics used to evaluate how well social media activities are achieving business goals.
- They help convert raw social media data into meaningful insights and track the performance of campaigns, content, and user engagement.
- These insights support informed decision-making and help improve overall social media strategy.

Significance of Social Media KPIs

- **Performance Tracking:** Helps measure how well campaigns and content are performing.
- **Better Decision-Making:** Provides clear data to guide marketing and business decisions.
- **Strategy Improvement:** Helps identify what is working and what needs improvement.
- **Goal Alignment:** Ensures social media efforts are aligned with business objectives.

Five Essential KPIs using example of an Instagram Influencer Campaign:

Identify five essential KPIs for an e-commerce brand launching a new product via influencer marketing on Instagram. How do these KPIs support business decision-making? (25 May)

1. Reach and Impressions

- Reach shows how many unique users saw the post.
- It helps understand how widely the campaign has spread.

2. Engagement Rate (ER)

- It includes likes, comments, shares, and saves.
- It shows how users are interacting with the content.

3. Click-Through Rate (CTR)

- It shows the percentage of users who clicked on the link.
- It measures interest in the product.

4. Conversion Rate

- It shows the percentage of users who completed a purchase.
- It directly reflects the success of the campaign in generating sales.

5. Cost Per Acquisition (CPA)

- It is the cost spent per successful customer.
- It helps measure the efficiency and profitability of the campaign.

How KPIs Support Decision Making

- **Performance Comparison:** Helps identify which influencer or campaign performed better so efforts can be focused on what works.
- **Budget Control:** Allows shifting budget towards high-performing campaigns and reducing spend on weaker ones.
- **Strategy Improvement:** Helps spot problems like high clicks but low sales, so changes can be made.
- **Future Planning:** Past KPI data helps predict results and set realistic goals for future campaigns.

16. Explain social media risk and the four steps in social media risk management.

Social Media Risk

- Social media risk refers to any potential threat or negative consequence that arises from a brand's or individual's activity on social media platforms.
- These risks can damage reputation, spread misinformation, lead to legal issues, or result in financial loss if not managed properly.
- Risks can come from internal sources like employee posts or external sources like customer complaints, fake news, or competitor attacks.

Four Steps of Social Media Risk Management (Health Campaign Example)

Step 1: Risk Identification

- Monitor social media platforms and hashtags to detect false claims or negative activity early.
- Early detection helps prevent a small issue from spreading further.

Example: A health campaign team spots tweets spreading vaccine myths and prepares to act before it gains traction.

Step 2: Risk Assessment

- Evaluate the risk based on how far it has spread and how fast it is growing.
- Helps decide whether a simple clarification or a stronger response is needed.

Example: The team checks how many users have shared the myth to determine the urgency of their response.

Step 3: Risk Mitigation

- Share accurate information through official sources and involve credible experts to counter false claims.
- Use fact checks and expert opinions to strengthen the response.

Example: Certified doctors post verified vaccine facts and misleading posts are flagged for removal.

Step 4: Risk Monitoring

- Track whether the misinformation is reducing after the response has been made.
- Helps improve future strategies and handle similar situations more effectively.

Example: The team monitors hashtag activity to confirm that accurate content is now reaching more users than the false claims.

17. Explain the steps involved in formulating a Social Media Strategy.

Step 1: Define Goals and Objectives

- Decide what the business wants to achieve, such as increasing brand awareness, generating sales, or improving engagement.

Example: An e-commerce brand aims to increase Instagram followers by 20% in three months.

Step 2: Identify the Target Audience

- Understand who the intended audience is based on age, location, and interests.

Example: A fitness brand targets health-conscious individuals aged 18 to 35.

Step 3: Choose the Right Platforms

- Focus on platforms where the target audience is most active instead of trying to be everywhere.

Example: A B2B company uses LinkedIn to reach business professionals instead of Instagram.

Step 4: Plan and Create Content

- Develop a content plan outlining what will be posted, how often, and in what format.

Example: A food brand posts three times a week with recipes, videos, and customer reviews.

Step 5: Monitor, Measure, and Improve

- Track performance using KPIs like engagement rate and reach, and improve the strategy based on results.

Example: A brand notices videos perform better than images and starts posting more video content.

18. Explain social media-based recommendation systems and their role in improving customer service with an example.

Social Recommendation Systems

- These systems use social media data such as friends, likes, shares, and interactions.
- Recommendations are influenced by what a user's social circle is engaging with.
- Helps overcome cold start problems by using friend and network data.
- Often provides more personalized and trustworthy suggestions.

Example: Instagram suggesting posts based on what your friends like or interact with.

Role of Social Media-Based Recommendation Systems using an example:

A fashion brand on Instagram uses social media-based recommendation systems to suggest outfits based on what a user's friends like, share, or purchase.

- **Personalization:** The user sees products that match their interests and social circle.
- **Faster Decisions:** Relevant suggestions help the user quickly choose what to buy.
- **Better Engagement:** Seeing what friends like increases interaction and trust.
- **Higher Satisfaction:** The user is more likely to find useful and appealing products.
- **Continuous Improvement:** The system updates recommendations based on likes, comments, and feedback.

19. Differentiate between traditional recommendation systems and social media-based recommendation systems.

Parameter	Traditional Recommendation Systems	Social Recommendation Systems
Data Source	Uses user-item interaction data like purchases and ratings.	Uses social media data such as friends, likes, and shares.
Basis	Based on user preferences and browsing history.	Based on social relationships and interactions.
Techniques	Content-based and collaborative filtering.	Social network analysis and interactions.
Personalization	Limited to individual behaviour.	Influenced by social connections.
Cold Start Problem	Cannot recommend to new users with no history.	Can recommend based on a new user's friends.
Trust Factor	Lower since suggestions are system generated	Higher since suggestions come from friends or influencers
Complexity	Easier to design and implement.	More complex due to social data.
Adaptability	Slower to adapt to changing user interests.	Adapts quickly based on social trends and interactions.
Real-Time Updates	Updates less frequently based on stored data.	Updates quickly based on real-time social activity.
Example	Amazon recommending products based on past purchases.	Instagram suggesting posts based on your friends' likes.

20. Explain Automated, Traditional, and Social Recommendation Systems.

1. Traditional Recommendation Systems

- These systems recommend items based on a user's preferences and past history, such as previous purchases or ratings.
- They mainly use techniques like content-based filtering (similar items) and collaborative filtering (similar users).
- Focus is on user-item interaction data, without considering social connections.
- They are easy to design but face issues like the cold start problem (new users/items).

Example: Amazon recommending products based on your previous purchases.

2. Social Recommendation Systems

- These systems use social media data such as friends, likes, shares, and interactions.
- Recommendations are influenced by what a user's social circle is engaging with.
- Helps overcome cold start problems by using friend and network data.
- Often provides more personalized and trustworthy suggestions.

Example: Instagram suggesting posts based on what your friends like or interact with.

3. Automated Recommendation Systems

- These systems generate recommendations automatically using algorithms and large amounts of user data.
- They analyze actions like clicks, views, likes, and browsing history to understand user behaviour.
- Capable of providing fast, real-time, and continuously updated suggestions.
- Widely used in modern platforms handling large-scale data.

Example: YouTube suggesting videos based on your watch history.

21. Explain common social media risks mitigation strategies.

Social Media Risk Mitigation Strategies

- Social media risk mitigation refers to the actions taken by businesses to reduce the impact of potential threats arising from using social media.
- Having proper strategies in place ensures that risks are handled quickly and prevents serious damage to the brand.

1. Establishing a Social Media Policy

- Set clear guidelines on what can be posted and who is allowed to post.
- Helps avoid mistakes and keeps communication consistent.

Example: All posts must be approved by the marketing team before publishing.

2. Social Media Monitoring

- Track mentions, hashtags, and comments to spot issues early.
- This helps detect negative feedback or misinformation before it spreads.

Example: A brand uses tools like Hootsuite to track sudden negative comments.

3. Crisis Communication Plan

- Prepare a clear plan on how to respond during a social media crisis.
- Ensures a quick and controlled response during a crisis.

Example: A food brand has ready responses for complaints about product quality.

4. Access Control and Account Security

- Limit access to social media accounts to authorized people only.
- Use strong passwords and security measures to prevent misuse.

Example: Only senior team members have login access to official accounts.

5. Employee Training and Awareness

- Train employees on responsible social media use and possible risks.
- Helps prevent accidental mistakes or inappropriate posts.

Example: A company conducts regular workshops on social media guidelines.

6. Content Review and Approval Process

- Check content before posting to avoid errors or harmful messages.
- Ensures posts match brand values and platform rules.

Example: Posts are reviewed by both marketing and legal teams before publishing.

6. Social Media Analytics Applications and Privacy

22. Explain the benefits of brand building. #

1. Increased Brand Awareness

- Helps more people recognize and remember the brand.
- Makes it easier for customers to recall the brand when they need a product or service.

2. Customer Trust and Credibility

- A strong brand builds trust among customers.
- People are more likely to choose brands they know and trust.

3. Customer Loyalty

- Good branding creates a strong connection with customers.
- Encourages repeat purchases and long-term relationships.

4. Competitive Advantage

- Helps the brand stand out from competitors in the market.
- Makes it easier to attract and retain customers compared to competitors.

5. Higher Sales and Revenue

- Strong brand recognition leads to more customer interest and increases sales.
- Customers are often willing to pay more for a brand they trust.

6. Better Marketing Effectiveness

- Makes marketing campaigns more impactful and easier to promote.
- Consistent branding helps deliver a clear message to the audience.

23. Explain issues addressed in privacy policies and limitations of privacy policies. %

Privacy Policies

- Privacy policies are official documents that explain how a platform or organization collects, uses, stores, and shares user data.
- They help users understand what happens to their personal information and provide transparency about how it is handled.

Issues Addressed in Privacy Policies

1. Data Collection

- Explains what type of user data is collected such as personal details, location, and browsing activity so users know what information they are sharing.

2. Data Usage

- Describes how the collected data is used, including purposes like personalization and advertisements

3. Data Sharing

- Specifies whether user data is shared with third parties like advertisers or service providers.

4. Data Security

- Explains how user data is protected from unauthorized access, leaks, or cyberattacks.

5. User Consent and Control

- Informs users about permissions and allows them to manage their privacy settings.

6. Data Retention

- States how long user data is stored and when it will be deleted or no longer used.

Limitations of Privacy Policies

1. Complex Language

- Privacy policies are often lengthy and written in difficult language, making them hard for users to understand.

2. Lack of Awareness

- Many users accept policies without reading or understanding them.

3. Limited Control

- Even though options are provided, users may not have complete control over how their data is collected or used.

4. Risk of Data Misuse

- Data can still be misused or exposed due to breaches, even if a privacy policy is in place.

5. Frequent Updates

- Privacy policies are updated regularly, but users may not be aware of these changes.

6. Dependence on Trust

- Users have to rely on companies to follow their policies, as there is no full guarantee of strict enforcement.

Asked once:

1. Social Media Analytics: An Overview

1. What is predictive analysis. #

Predictive analytics is a type of social media analytics that uses past data to forecast future outcomes and trends.

Working

- It analyzes historical social media data to identify patterns, relationships, and trends in user behaviour.
- These patterns are then used to predict future events such as customer actions, engagement levels, or market demand.
- It helps organizations make proactive decisions instead of only reacting to past data.

Example

Predicting future product sales based on users showing buying interest through posts, comments, or search activity.

2. Social Network Structure, Measures & Visualization

2. Explain density, bridge, hub, clique, and cluster in a social network with suitable examples.

1. Density

- Density refers to how many connections exist in a network compared to the maximum possible connections.
- A higher density means a closely connected group, while lower density indicates fewer connections.

Example: A Instagram group where every member follows and regularly interacts with every other member has high density.

2. Bridge

- A bridge is a node or connection that links two different groups or communities.
- It helps in passing information between groups that are otherwise not directly connected.

Example: A user who is part of both tech and gaming pages acts as a bridge.

3. Hub

- A hub is a node that has a large number of connections compared to others.
- It acts as a central point and plays an important role in spreading information quickly across the network.

Example: A celebrity or influencer whose posts reach millions of followers acts as a hub.

4. Clique

- A clique is a group of nodes where every member is directly connected to every other member.
- It represents a tightly connected group with strong relationships.

Example: A group of friends on Instagram who all follow, like, and comment on each other's posts.

5. Cluster

- A cluster is a group of nodes who are more connected to each other than to the rest of the network.
- It represents communities or groups formed based on common interests.

Example: A set of Twitter accounts all tweeting about cricket forming a visible community in the network.

3. Differentiate among social media, Web 2.0, and social network sites.

Parameter	Social Media	Web 2.0	Social Network Sites (SNS)
Meaning	Online platforms where users create and share content.	Technology that allows interactive and dynamic websites.	Websites where users connect and build relationships.
Type	Platform / application	Technology / concept	Type of social media
Main Focus	Sharing content and communication.	Making websites interactive.	Connecting people.
User Role	Users create and share content	Users participate through interactive features.	Users create profiles and add friends/followers.
Dependency	Depends on Web 2.0 technologies.	Does not depend on social media.	Depends on both Web 2.0 and social media.
Structure	Content-centric	Technology-centric	Profile and network-centric
Interactivity	High, users engage through likes, shares and comments.	Enables interactivity but is not a platform itself.	High, focused on profile-based interactions.
Scope	Broad (includes many platforms and services).	Foundational concept used across platforms.	Specific category within social media.
Examples	YouTube, Twitter	Blogs, Wikis	Facebook, LinkedIn

4. Define centrality and its types. How is it computed?

Centrality is a measure used in social network analysis to identify how important or influential a node is within a network.

Types of Centrality

1. Degree Centrality

- Measures the number of direct connections a node has.
- Nodes with higher connections are considered more active or important.

2. Closeness Centrality

- Measures how close a node is to all other nodes in the network.
- Nodes with shorter paths to others can spread information more quickly.

3. Betweenness Centrality

- Measures how often a node lies on the shortest path between other nodes.
- Nodes with high betweenness act as bridges controlling information flow.

4. Eigenvector Centrality

- Measures not just the number of connections, but their quality.
- A node connected to important nodes gets a higher score.

How is it Computed?

- **Degree Centrality:** Count the number of edges connected to a node.
- **Closeness Centrality:** Calculate the inverse of the total shortest distance from a node to all others.
- **Betweenness Centrality:** Count how many shortest paths pass through a node.
- **Eigenvector Centrality:** Assign scores based on connections to other high-scoring nodes.

3. Social Media Text, Action & Hyperlink Analytics

5. Highlight the differences between Social Media Text Analytics and Hyperlink Analytics.#

Parameter	Social Media Text Analytics	Hyperlink Analytics
Meaning	Analyzes social media text to understand opinions and sentiment.	Analyzes links between websites and platforms to understand connections.
Focus	Focuses on content like tweets, comments, and reviews.	Focuses on in-links, out-links, and co-links.
Data Type	Unstructured text data.	Structured link data.
Data Source	Social media platforms like Twitter, Instagram, and Facebook.	Websites, blogs, and social media shared links.
Purpose	Understand user behaviour, opinions, and trends.	Analyze traffic flow and website relationships.
Techniques used	Sentiment analysis, intention mining, trend detection.	Link impact analysis, co-link analysis, network mapping.
Insights	User opinions and preferences.	Website importance and connectivity.
Application	Marketing and customer feedback analysis.	SEO, competitor analysis, and website ranking.
Example	Analyzing tweets to determine customer sentiment about a product.	Analyzing backlinks to identify authoritative websites.

6. Explain tools of Hyperlink analytics.

1. Webometric Analyst

Webometric Analyst is a web impact analysis tool used to analyze the impact of websites through hyperlinks and web mentions.

- It can extract and analyze in-links, out-links, and co-links between websites.
- Helps in creating network diagrams to visualize relationships.
- Measures the web impact of a site based on how often it is cited.

2. VOSON

VOSON is a tool used for collecting and analyzing hyperlink networks, especially from web and social media data.

- It helps extract and visualize network data to understand relationships between websites.
- Useful for studying online communities and how information flows across networks.

3. Google Search Console

Google Search Console is used to monitor website performance and analyze backlinks.

- It shows in-links (backlinks) pointing to a website and their sources.
- Helps improve SEO by identifying important linking websites and traffic sources.

4. Moz link explorer

Moz is a widely used SEO tool used for analyzing link structures and website authority.

- Provides metrics like Domain Authority (DA) and Page Authority (PA).
- Helps evaluate the quality and strength of backlinks.

5. Majestic

Majestic is a specialized tool for backlink and link network analysis.

- Uses metrics like Trust Flow and Citation Flow to measure link quality.
- Helps understand the influence and credibility of websites based on links.

7. Write a short note on Intention analysis in social media.

Intention Analysis

Intention analysis is a technique used in social media analytics to identify the purpose or intent behind a user's content. Unlike sentiment analysis, which focuses on how users feel, intention analysis focuses on what users are likely to do.

Working

- Uses keywords and phrases like “buy,” “need,” “planning,” or “looking for” to identify intent.
- Applies text mining and NLP techniques to classify different types of intentions.
- Groups user data based on intent categories for better analysis.

Types of Intentions

- **Purchase Intention:** User shows interest in buying a product.
- **Recommendation Intention:** User suggests a product or service to others.
- **Complaint Intention:** User expresses dissatisfaction or issues.
- **Switching Intention:** User plans to change from one product/service to another.

Applications of Intention Analysis

- Helps identify potential customers and target them with relevant marketing.
- Useful for retaining customers by detecting users who may leave.
- Helps improve products by understanding user needs and expectations.
- Helps in demand forecasting and business strategy planning.

Example

A post like “Planning to buy this phone next month” shows purchase intention, while “Thinking of switching to another brand” indicates switching intention.

4. Social Media Location & Search Engine Analytics

8. Write a short note on Privacy concerns in location analytics with examples.

Privacy in location analytics refers to protecting a user's location data from misuse. While location data is useful for businesses and services, it can also expose sensitive personal information if not handled properly.

Privacy Concerns with examples:

1. Lack of Consent

- Apps may collect location data without clearly informing users.
- Users often accept permissions without fully understanding how their data is being used.

Example: An app continues tracking location even when running in the background.

2. User Identification

- Location data can reveal personal details like home, workplace, and daily routine.
- Even anonymized data can sometimes be used to identify individuals.

Example: Tracking a user's daily movement between home and office.

3. Data Security Risks

- Location data can be exposed through data breaches or hacking.
- This information can be misused for activities like stalking or theft.

Example: A data breach revealing users' location history.

4. Data Misuse

- Data collected for one purpose may be used for other purposes without consent.
- It may also be shared with third parties without proper permission.

Example: Location data being used for targeted advertising.

5. Over-collection of Data

- Apps may collect more location data than necessary for their function.
- This increases privacy risks and leads to unnecessary data storage.

Example: A weather app tracking exact location continuously instead of just the city.

9. List all the location analytics tools and also explain working of every tool.

1. Google Maps / Google Earth

- Widely used tools for visualizing geographical data and understanding locations on a map.
- Help in identifying routes, regions, customer distribution, and spatial patterns easily.

Working: Uses GPS and mapping data to plot locations on maps, allowing users to analyze patterns such as movement, distance, and regional activity.

2. Esri (GIS)

- A Geographic Information System used for advanced mapping and analysis of spatial data.
- Helps understand relationships, patterns, and trends by combining location data with business or demographic data.

Working: Combines multiple data layers (such as maps, population data, and sales data) to perform detailed spatial analysis.

3. Tweepsmap

- A tool used to analyze the geographical distribution of Twitter followers.
- Shows where followers are located across countries, states, or cities, helping understand audience spread.

Working: Collects follower data from Twitter accounts and maps their locations to provide a clear picture of audience distribution.

4. Trendsmap

- A real-time tool that displays trending topics and hashtags on Twitter based on location.
- Helps identify what topics are currently popular in different regions at a given time.

Working: Tracks live tweets and maps trending hashtags geographically, showing how trends vary across locations in real time.

5. Hootsuite Insights

- A social media analytics tool that includes location-based tracking of user activity and engagement.
- Helps businesses understand which regions are generating the most interaction.

Working: Collects data from connected social media accounts and filters engagement metrics based on geographic regions.

5. Social Information Filtering

10. Explain the process of managing misinformation risks on social media.

Misinformation on social media refers to false or misleading information that spreads quickly among users. It can influence public opinion and lead to wrong decisions.

Process of Managing Misinformation

- It involves identifying false information early by monitoring posts, trends, and user discussions.
- The information is then analyzed to understand its seriousness and how widely it has spread.
- Appropriate action is taken by sharing correct information through trusted sources to control its spread.
- Continuous monitoring is done to check whether the misinformation is reducing and to prevent it from spreading again.

Example

During a health campaign, false vaccine claims spread online, and authorities respond by sharing verified information and monitoring the situation.

11. Write a short note on Types of social media risk.

Social Media Risk

- Social media risk refers to any potential threat or negative consequence that arises from a brand's or individual's activity on social media platforms.
- These risks can damage reputation, spread misinformation, lead to legal issues, or result in financial loss if not managed properly.

Types of Social Media Risk

1. Reputational Risk

- Negative posts, comments, or viral content can quickly damage a brand's image and public trust.

Example: A complaint post goes viral and harms the company's reputation.

2. Security Risk

- Social media accounts can be hacked, leading to misuse of data or unauthorized posts.

Example: A brand's account is hacked and fake posts are shared.

3. Privacy Risk

- Personal or sensitive information may be exposed or used without proper consent.

Example: User data from a platform gets leaked online.

4. Legal Risk

- Posting copyrighted or inappropriate content can lead to legal action.

Example: Using someone else's content without permission leads to a lawsuit.

5. Misinformation Risk

- False or misleading information can spread quickly and create confusion or panic.

Example: Fake news about a product spreads online.

6. Social Engineering Risk

- Users can be tricked into sharing sensitive information through scams or fake messages.

Example: A fake message asks users to enter their login details.

6. Social Media Analytics Applications and Privacy

12. What are the benefits of social media users who use social media?

1. Easy Communication

- Social media makes it easy to stay connected with friends, family, and colleagues instantly regardless of location.

2. Access to Information

- Users can quickly access news, updates, and useful information on any topic in real time.

3. Entertainment

- Provides a wide variety of content like videos, reels, memes, and live streams for relaxation and enjoyment.

4. Networking Opportunities

- Helps users connect with professionals, discover job openings, and build meaningful career related networks.

5. Learning and Awareness

- Users can learn new skills, follow experts, and stay updated with current trends.

6. Self-Expression

- Allows users to share their thoughts, creativity, and opinions with a wide audience through posts and videos.

13. Summarize ethical issues when mining social media.

1. Privacy Concerns

- Collecting user data without clear consent can invade personal privacy.

2. Lack of Informed Consent

- Users are often unaware that their data is being collected and analyzed behind the scenes.

3. Data Misuse

- Collected data is often used for purposes beyond what users expected or agreed to.

4. Anonymity Issues

- Even anonymized data can sometimes be traced back to individuals.

5. Bias and Fairness

- Data and algorithms may reflect existing biases, leading to unfair or misleading results.

6. Data Security Risks

- Collected data may be exposed through leaks or hacking, putting user information at risk.

14. Discuss various privacy attributes of Social Media sites.

1. Profile Visibility

- Users can set their profile to public or private, helping control who can view their posts and personal details.

2. Data Collection Controls

- Platforms allow users to manage what data is collected, such as location or activity, reducing unnecessary tracking.

3. Third-Party App Permissions

- Users can review and remove access given to external apps, preventing misuse of their personal data.

4. Ad Personalization Settings

- Users can control how their data is used for targeted advertising, helping reduce unwanted or overly personalized ads.

5. Two-Factor Authentication

- Adds an extra layer of security by requiring a second verification step, protecting accounts from unauthorized access.

6. Block and Restrict Controls

- Users can block or limit specific accounts, helping avoid unwanted interactions and protect their privacy.

7. Data Download and Deletion

- Platforms provide options to download personal data or delete accounts, giving users control over their stored information.

8. Tag and Mention Controls

- Users can manage who can tag or mention them, helping control how they appear in others' posts.

15. What are the threats to privacy on social media?

1. Data Collection without Consent

- Platforms and third-party apps often collect user data without clearly informing users or obtaining proper consent.

Example: A quiz app collecting a user's personal details through a Facebook login without their knowledge.

2. Account Hacking and Unauthorized Access

- Weak passwords or phishing attacks can give unauthorized individuals access to a user's private account and data.

Example: A hacker gaining access to a user's Instagram account.

3. Location Tracking

- Social media apps track and store a user's location through GPS, IP addresses, and geo-tagged posts.

Example: A user's home address being identified through location tags on their regular posts.

4. Data Breaches

- Large scale security failures at social media companies can expose millions of users' personal data to hackers.

Example: A security breach exposing the phone numbers and emails of millions of users on a platform.

5. Data Oversharing by Users

- Users often unknowingly share too much personal information that can be easily exploited by others.

Example: A user publicly posting their vacation dates, letting strangers know their house will be empty.

6. Cyberstalking and Harassment

- Publicly available profile information can be used by malicious individuals to track or harass users.

Example: A stalker using a user's public check-ins to track their daily location and routine.

7. Identity Theft

- Personal information shared on social media can be used to steal a user's identity for fraudulent purposes.

Example: A fraudster using details from a LinkedIn profile to impersonate someone and commit fraud.

16. Explain how public sector agencies can leverage social media analytics during disaster response with examples.

Social media analytics helps public sector agencies collect and analyze real-time data from platforms like Twitter and Facebook during disasters.

Uses in Disaster Response

1. Real-time Information Collection

- Agencies can track posts, tweets, and hashtags to gather live updates from affected areas.
- Helps quickly identify locations where help is needed.

Example: During floods, people post their location asking for rescue.

2. Situation Awareness

- Helps understand the severity and spread of the disaster.
- Provides updates on damage, traffic conditions, and weather.

Example: Authorities track posts during an earthquake to understand its impact.

3. Resource Allocation

- Helps decide where to send rescue teams, food, and medical aid.
- Ensures resources are used efficiently in the most affected areas.

Example: Relief teams are sent to locations with the highest number of distress posts.

4. Rumour Control

- Helps identify false information spreading on social media.
- Enables agencies to share accurate updates and prevent panic.

Example: Officials correct fake news about disaster intensity or safety measures.

17. Relate different techniques to secure social media accounts.

1. Strong Passwords

- Use a strong password with a mix of letters, numbers, and symbols instead of simple or predictable ones.
- Avoid using common or easily guessable information.

Example: Using a unique password instead of “123456” or your name.

2. Two-Factor Authentication (2FA)

- Adds an extra layer of security beyond just the password.
- Requires a code sent to your phone or email for login.

Example: Entering an OTP after typing your password.

3. Privacy Settings Management

- Adjust settings to control who can see your posts and personal details.
- Helps limit access to trusted people only.

Example: Making your profile visible only to friends.

4. Avoiding Suspicious Links

- Avoid clicking on unknown or suspicious links in messages or emails.
- Helps prevent phishing attacks and malware.

Example: Ignoring messages asking you to “click here to claim a prize.”

5. Regular Account Monitoring

- Check account activity and login history regularly.
- Helps detect any unusual or unauthorized access early.

Example: Noticing a login from an unknown location.

6. Keeping Apps and Software Updated

- Regular updates fix security issues and protect against new threats.
- Always keep apps and devices updated for better security.

Example: Updating Instagram to the latest version for security fixes.

~ AJ