



JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

PGDM

FIFTH TRIMESTER (Batch 2019-21)

END-TERM EXAMINATIONS, JANUARY 2021

Set-I

WASM

Moderated

Set-I

Course Name	Web Applications and Social Media Analytics	Course Code	T5-19-WASM
Max. Time	2 hours	Max. Marks	40 Marks

INSTRUCTIONS:

1. All questions are compulsory. Attempt all questions in sequence.you
2. Read the questions carefully and provide precise and point-wise answers. Maximum marks are mentioned against each question.
3. Please try to complete the answer to each question in the time allotted.
4. Maximum word limit for each answer is 250 words

Question 1.

Caselet – Nike on Social Media

By 2010, Nike's Air Jordan division, based on images and write-ups of Michael Jordan, was in serious trouble. There seemed to be no justification for the Air Jordan web site, as no one seemed to be purchasing sneakers from the web site. Most youngsters, at whom the website was targeted, skipped the Air Jordan sneakers and went to other brands. Bounce rate on the Air Jordan web page (with the great man's photo) was climbing to unacceptable levels.

A big component of the sales management team, especially those involved in social media were keen on pulling the plug on the Air Jordan web site and replacing it with some other approach. However, such a statement sent shock waves throughout Nike, especially the older members of top management, who associated the growth of Nike with Jordan, despite all evidence to the contrary.

- a. Given that the focus of the Air Jordan website was on a superstar who had retired 5 years before the new campaign launched on social media, determine whether you feel that Nike was being unnecessarily blinkered in using Jordan on social media to popularize the sneakers? [3]
- b. How would you organize the case against using Jordan on the Air Jordan web site with facts and figures? What measures would you use to justify removing Jordan from the Air Jordan web site? [2]
- c. How would you get the social media team to present their point of view across to top management? Suggest some key arguments that could help. [3]
- d. Please criticize the contention that the sneaker brand really requires Jordan's name to succeed. Could the same effort by Nike have succeeded for (say) more recent stars like Stephen Curry, or some neutral name like Flying Shoes? Please justify. [2]

Total time: 30 minutes

Question 2.

- a. Define degree centrality in a network with a simple example. [2]
- b. You are planning to initiate a marketing campaign using LinkedIn in two different locations, where there are 8 individuals and 6 individuals. The network of individuals and their interactions in the two locations are as follows.
- Location 1 - Given that the people concerned are A, B, C, D, E, F, G and H, what is the raw degree centrality and normalized degree centrality if the network has links A-C, B-C, C-D, D-E, E-F, E-G, F-G, F-H and G-H.
- Location 2 – The network comprises I at the centre and 5 links, I-J, I-K, I-L, I-M and I-N
- Identify the key hubs in each location? Please justify your response. [4]
- c. Define betweenness centrality in a network with a simple example. [2]
- d. Consider the network in Location 1 above. Given the network A-B-C-D-E-F-G-H, which nodes would you use to pass on WhatsApp messages to ensure that your information reaches everyone in the network? Please justify your response, using the concept of betweenness centrality. [2]

Total time: 30 minutes

Question 3.

- a. How did Liu and Zhang define sentiment and opinion in 2012? Please explain their definition in terms of a simple example. [2]
- b. Consider the following arbitrary passage taken from a customer support organization feedback.
- Yesterday, I bought a Nokia phone and my brother purchased a Google phone from the same Best Buy superstore. We called each other when we got home. The voice on my phone was not clear. The camera in my phone was good. My brother said that the sound of his phone was clear. I wanted a phone with good voice quality. So I was dissatisfied and returned the phone to Best Buy today morning.
- i. Identify the objects in this passage. [2]
- ii. Extract the specific aspects that belong to the high-level object. Please justify. [2]
- iii. How would you group the synonyms present? Why is this step needed? [2]
- iv. How would you classify opinion orientation in this passage? Please explain the opinion orientation value that you get in this passage. [2]

Total Time: 30 minutes

Question 4.

- a. Please summarize the importance of actions analytics? [2]
- b. What are the common social media actions performed by the users of:
 - i. Facebook
 - ii. Twitter
 - iii. LinkedIn
 - iv. Instagram [4]
- c. ARPU (Average Revenue Per User) is an important metric that is tracked by every mobile app. Why is this important in monitoring mobile apps? [2]
- d. Define location analytics. What types of location analytics are in use today? [2]

Total Time: 30 minutes

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Question 1.

Caselet – Digital Marketing And Social Media Analytics

ABC Inc., where you are the Chief Analytics Officer & Business Strategy Head, is an online retail store for clothes and apparel. They showcase different products, brands, and styles.

With your data for formal shirts and ties, you find that once the customer buys formal shirts, his chances of buying a tie goes up seven-fold. The store also provides the option to its customers to return the undamaged product back within 30 days with full refund.

You do a further investigation of customers who are buying ties along with shirts and found that product return rates of the ties for these transactions are also at least 3 times more than the other return rates.

- i. What are the key problem areas for ABC Inc? Which specific processes would you recommend for improvement? [2 + 3]
- ii. You analyze the distribution of customers vs product categories and realize that there is an interesting peak for customers purchasing more than 50 product-categories. Who are these customers? Why are they buying so many product categories for their usage? On further analysis, you find that these customers are growing at a significantly faster rate than normal customers.
Since the inception of the company 10 years ago, the percentage of customers purchasing 50+ product categories in a year has gone up exponentially and it is currently at 4.5%. This set of customers also contributes to about 43% of all the sales for ABC Inc.
Suggest different hypotheses on what could be happening here. [5]

Question 2.

- a. You are planning to initiate a marketing campaign using Facebook in two different locations, where there are 8 individuals and 6 individuals. The network of individuals and their interactions in the two locations are as follows.

Location 1 - Given that the people concerned are A, B, C, D, E, F, G and H, what is the raw degree centrality and normalized degree centrality if the network has links A-C, B-C, C-D, D-E, E-F, E-G, F-G, F-H and G-H.

Location 2 – The network comprises I at the centre and 5 links, I-J, I-K, I-L, I-M and I-N

Identify the key hubs in Location 1 and Location 2. Please justify your response. [4]

- b. Define closeness centrality in a network with a simple example. [2]
- c. Centrality can be used as an index of power in networks, because the most central node is more likely to occupy the most powerful position. Do you think it is true? Answer with reasons as to what you think. Please justify in 10 lines or less. [4]

Total time: 30 minutes

Question 3.

- a. How would you define a regular opinion in a text passage? Please explain the concepts of entity, aspect, intensity of opinion orientation, opinion holder and time, in terms of a simple example. [2]
- b. Consider the following arbitrary passage taken from the customer support organization of a bank.

Mr. Stark has been with the company for about 20 yrs. He hates his statement format and wishes that we would show a daily balance to help him know when he falls below the required balance on his account.

- i. Identify the objects in this passage. [2]
- ii. How would you group the synonyms present? Why is this step needed? [2]
- iii. How would you classify opinion orientation in this passage? Please explain the opinion orientation value that you get in this passage. [2]
- iv. Give examples of sentences in the passage that handle neutral sentiment. [2]

Total Time: 30 minutes

Question 4.

- a. What are the key metrics for user acquisition and user revenue?

When looking at website traffic by device to Jaipuria, the 2019 averages are:

Desktop: 43.7%

Mobile Phone: 53.4%

Tablets: 2.0%

When we look at some other key metrics – pages per session, bounce rate, and time on site, we see that these statistics have remained fairly consistent over the past 5 years.

Pages per session (average over 5 years): 2.94 pages

Bounce rate (average over 5 years on all devices): 61%

Time spent by user on site (average over 5 years): 2:51 minutes

Given this data, what are the top 3 takeaways that you would identify about the student population of Jaipuria? How would you reduce the bounce rate? [2 + 4]

- b. ARPU (Average Revenue Per User) is an important metric that is tracked by every mobile app. Why is this important in monitoring mobile apps? [2]
- c. Define location analytics. What types of location analytics are in use today? [2]

Total Time: 30 minutes