QP code : 10082386

BE sem VIII R-19 C scheme Computer

(Time: 3 Hours) **Marks: 80**

N.B: 1) Question **number 1** is compulsory.

2) Attempt **any three** out of the remaining.

3) Assume suitable data if **necessary** and justify the assumptions.

4) Figures to the **right** indicate full marks.

Q 1

A Enlist the issue in designing the Distributed System? Explain failure transparency & location transparency in detail [5]

B What are the key features of Global Scheduling algorithm. [5]

C Explain Bully algorithm with example [5]

D Explain the various ordered semantics used for Many to Many communication [5]

Q 2

A Explain Chandy Misra Hass Algorithm [10]

B Desirable features of a good DFS? [10]

Q 3

A Explain load estimation, process transfer and location policies with respect to load balancing approach in distributed systems. [10]

B Explain Raymond's algorithm for mutual exclusion. [10]

Q 4

A Explain the goals of distributed systems. [10]

B How Lamport does synchronizes logical clock explain with example? Which events are said to be concurrent in Lamport's timestamp. [10]

Q 5

A What is fault tolerance? Describe different types of failure models. [10]

B What is RPC? Explain working of RPC in detail [10]

Q 6

A Discuss the technique to achieve the Process resilience. [10]

B What is need of code migration? Explain the role of process to resource and resource to machine binding in code migration. [10]

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QP code : 10085500

BE · sem VIII Computer R-19 C scheme

(3 Hours) **Total Marks: 80**

NB:

1) Question number **1** is compulsory
2) Attempt **any three** out of the remaining **five questions**.
3) Assume suitable data if **necessary** and justify the assumptions.
4) Figures to the **right** indicate full marks

Q1 A What is the difference between data science and data analytics? **10**

B What is ANOVA? Brief about benefits of ANOVA technique. **10**

Q2 A What are Type I and Type –II errors? Give examples. **10**

B Explain the data science tasks with proper examples. **10**

Q3 A Describe the terms: Cross Validation, K-fold cross validation, leave-1 out and Bootstrapping. **10**

B Calculate the coefficient of correlation for the following data with Karl Pearson's method. **10**

X	15	18	20	28	34
Y	40	42	46	50	52

Q4 A Find Bowley's coefficient of skewness of the following series. **10**

Profit (in crores)	4-8	8-12	12-16	16-20	20-24
No. of films	4	10	15	8	3

B What are the pros and cons of an Auto Regressive Integrated Moving Average (ARIMA) model? Explain with proper examples. **10**

Q5 A Explain the steps to build a product recommendation model in detail. **10**

B What is Hypothesis testing? Write about the different types of Hypothesis testing. **10**

Q6 **Write a note on any FOUR :** **20**

A. Data Visualization
B. Applications of Data Science
C. Data Exploration
D. Taxonomy of time series forecasting methods
E. Outlier detection methods

BE/sem VIII/computer/R-19 C scheme QP-10082920

Duration: - 3 Hours **Marks: 80 Marks**

N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

Q.1 **Solve any four** **20**

a. Explain Action Analytics with example.

b. What is the role of Centralization and Tie Strength in social network analysis?

c. Highlight the differences between Social Media Text Analytics and Hyperlink Analytics.

d. Explain the challenges faced while performing Social Media Analytics.

e. Explain how Social Network Visualization enhances the interpretation of large-scale online interactions.

Q.2 a. What is social network structure? List at least two different networks that exist within Instagram. For each one, answer the following: **10**

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?

b. Explain each of the seven layers in Social Media Analytics and how their integration gives a complete view for business intelligence, with real-life examples **10**

Q.3 a. Discuss the role of text analytics in social media analytics. Using a hypothetical social media dataset, explain the process of extracting meaningful insights using text analytic. **10**

b. What is a social media-based recommendation system and how can social media-based recommendation systems be used to improve customer service and support, explain with example? **10**

Q.4 a. What is search engine optimization? What are the different methods to do it? 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? **10**

b. What are social media KPIs? 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? **10**

Q.5 a. Explain the process of managing misinformation risks on social media. Describe the four steps of risk management in the context of a health awareness campaign. 10

b. Describe how public sector agencies can leverage social media analytics during disaster response with examples.

Q.6 20

a. What is centralization in social network analysis? Illustrate its role using an example from a political campaign.

b. Write short note on
i) Privacy concerns in location analytics with examples
ii) Challenges to Social Media Analytics,

BE sem VIII Computer R-19 C scheme

[Time: 3 Hours] [Marks:80]

1. **Questions No. 1 is Compulsory.**
2. **Attempt any three out of remaining Questions.**
3. **Figures to the right Indicate full marks.**

Q.1 Attempt any Four. **20**

a) Explain any five Salient features of the Environment Protection Act, 1986.

b) Describe the current energy scenario in India. What challenges does India face in meeting its energy demands?

c) What is a food chain? How does it differ from a food web?

d) What are atomic and biomedical hazards?.

f) Explain the role of the government as a planning and regulatory agency.

Q.2 a) Discuss major environmental problems in India and their implications for public health and natural resources. **10**

b) Explain Ozone layer depletion? What are the Causes, effects and preventive measures of Ozone depletion? **10**

Q.3 a) Define ecosystem. Classify different types of Ecosystems? What are the biotic and abiotic components of an ecosystem? **10**

b) Discuss the role of Central Pollution Control Board (CPCB) in pollution monitoring. **10**

Q.4 a) What is ISO 14000? Explain its significance in environmental management and how it helps organizations reduce their environmental impact. **10**

b) What is Corporate Environmental Responsibility (CER)? Explain its importance and mention any three ways in which companies can practice CER to promote environmental sustainability. **10**

Q.5 a) Compare natural and human-made sources of greenhouse gases. Which ones have the greatest impact on global warming and why? Support your answer with examples **10**

b) What is Environmental Quality Management (EQM)? Explain its objectives in detail. **10**

Q.6 a) With reference to EMS, explain PDCA cycle with neat diagram. **10**

b) Critically evaluate the concept of sustainable development as a multidimensional approach. How does it reconcile the conflicting goals of economic growth, environmental conservation, and social equity? **10**
