

**IV Semester MBA Regular & Supplementary Examinations, April, 2025**  
**INTERNATIONAL FINANCE**  
**(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs**

**Max. Marks: 60**

**Answer any Five questions**  
**All questions carry EQUAL marks**  
**Question No. 8 is Compulsory**

1. a) Compare and contrast different theories of international business, and analyze how recent changes and challenges impact the field of International Financial Management. 6 M  
b) Evaluate the relationship between international business methods and the theories of international business, emphasizing how these methods contribute to the overall success of multinational corporations. 6 M
2. a) Analyze the strengths and weaknesses of the flexible exchange rate regime, highlighting its impact on global economic stability. 6 M  
b) Assess the challenges and benefits of the Economic and Monetary Union (EMU) and its implications for participating countries. 6 M
3. a) Compare and contrast currency futures and options markets, highlighting their distinctive features and applications. 6 M  
b) Evaluate the impact of speculation in the forward market on currency values, considering both advantages and risks. 6 M
4. a) Analyze the relationship between inflation, interest rates, and exchange rates, emphasizing the concept of Purchasing Power Parity. 6 M  
b) Evaluate the role of international arbitrage and interest rate parity in managing exchange rate risk. 6 M
5. a) Compare and contrast international capital structures and their impact on the cost of capital. 6 M  
b) Evaluate the factors that influence long-term asset-liability management in the context of international financial markets. 6 M
6. a) Evaluate the role of Export-Import Bank of India in facilitating international trade and assess the significance of short-term asset-liability management in global business. 6 M  
b) Compare various payment methods in international trade and analyze the methods used in trade finance. 6 M
7. a) Elaborate on the government's influence on exchange rates within different exchange rate systems. How does government intervention affect currency values in the international market? 6 M  
b) Discuss International Fisher Effect. 6 M

8. **CASE STUDY:**

12 M

In 2019, Argentina experienced a severe economic crisis, including a sharp depreciation of the Argentine peso. Examine how the exchange rate movements influenced businesses operating in Argentina, with a focus on international companies. Assess the government's role in managing exchange rates during this crisis and its impact on foreign businesses.

**Questions:**

- a. Explain the factors that contributed to the sharp depreciation of the Argentine peso during the economic crisis in 2019. How did these factors affect businesses with international operations in Argentina?
- b. Evaluate the effectiveness of the government's intervention in managing exchange rates during the crisis. How did these interventions impact the stability of the foreign exchange market and the decisions of multinational companies operating in Argentina?

IV Semester MBA Regular & Supplementary Examinations, April, 2025  
STRATEGIC HUMAN RESOURCE MANAGEMENT  
(MASTER OF BUSINESS ADMINISTRATION)

Time: 3 Hrs

Max. Marks: 60

Answer any Five questions  
All questions carry EQUAL marks  
Question No. 8 is Compulsory

1. Discuss the various HR strategies adopted by Companies to enhance performance. 12M
2. Investment in HR leads to increased retention of employees- Offer your comments. 12M
3. Discuss the significance of building team based organizations and the challenges therein. 12M
4. What are the objectives of International Compensation? Explain the different approaches to international compensation. 12M
5. Discuss the role of training in maintaining employees in international assignments. 12M
6. Explain the critical components of the repatriation process. What precautions need to be taken to ensure the success of international assignments? 12M
7. Describe the various investment approaches 12M
8. **CASE STUDY:** 12M

Central Bank was instituted in 1980. With matriculation qualification most of the employees joined the bank in 1980s and 1990s. In course of time they became branch and regional managers. These managers have been performing banking functions of collecting, depositing and giving loans and advances. Top management of the bank decided to employ MBA candidates with marketing specialization as marketing executives in 2016. The managers of the bank protested against management's decision, saying that they could perform marketing functions more effectively than MBA candidates as marketing executives. But the top management ignored the opposition and employed MBAs. MBAs joined the bank in 2017 and assumed marketing responsibilities. The performance was poor during 2017 and 2018 in deposit mobilization and advancing and recovery of loans. The HR department was asked to find out reasons for poor performance. The newly employed marketing executives felt that old managers would not accept new ideas proposed by them, whereas old managers opinion that the marketing executives thought very high of themselves and did not allow themselves to learn from others' experience and ideas. Both felt that there were not functional interactions between the two groups.

Questions :

- a) What is the problem in this case ?
- b) What do you recommend to solve it ?

Code: 22MBA4011

SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)

**IV Semester MBA Regular & Supplementary Examinations, April, 2025**  
**DATA MINING AND MACHINE LEARNING**  
**(MASTER OF BUSINESS ADMINISTRATION)**

Time: 3 Hrs

Max. Marks: 60

**Answer any Five questions**  
**All questions carry EQUAL marks**

**Question No. 8 is Compulsory**

1. a) What are the key steps in data pre-processing, and why are they essential? **6M**  
b) Explain the role of data analytics in improving business intelligence. **6M**
2. a) Define frequent item sets and explain their role in association rule mining. **6M**  
b) Provide examples of scenarios where constraint-based association mining is beneficial. **6M**
3. a) Define Business Intelligence and explain its significance in modern business. **6M**  
b) Discuss challenges that organizations may face during the implementation of BI systems. **6M**
4. a) Differentiate between supervised, unsupervised, and reinforcement learning. **6M**  
b) Explain the importance of training, validation, and testing phases in machine learning. **6M**
5. a) Discuss methods for transforming raw data into probability distributions. **6M**  
b) Define vector quantization and its role in data compression and clustering. **6M**
6. a) Explain how RBFs and splines can be used for function approximation. **6M**  
b) Explain the concepts of interpolation and basic functions. **6M**
7. a) Discuss the k-nearest neighbors (KNN) algorithm and its parameters. **6M**  
b) Define decision trees and their role in supervised learning. **6M**
8. **CASE STUDY:** **12M**

David Stella is a marketer of industrial pumps and would like to conduct an analysis on the customer loyalty of the old and new customers of their company. Instead of conducting on their own, the survey, data collection, data cleaning, pre-processing and the maximum possible analysis of classification, clustering and association rule mining; the company has decided to give it for a competitive business analyst. They are seeking for the consultant who can provide all kinds of the services as specified above. They have an offer of 25 lacks as an advocacy fees.

- If you want to get that big offer what kind of plans do you have to accomplish data collection, data cleaning, pre-processing and the maximum possible analysis of classification, clustering and association rule mining.
- Specify the algorithms used for the analysis in detail
- State the categorical outcomes expected out of the analysis.

Code: 22MBA4011

**SET-2**

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)**

**IV Semester MBA Regular & Supplementary Examinations, April, 2025**

**DATA MINING AND MACHINE LEARNING  
(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs**

**Max. Marks: 60**

**Answer any Five questions  
All questions carry EQUAL marks  
Question No. 8 is Compulsory**

1.	a)	<p><b>What are the key steps in data pre-processing, and why are they essential?</b></p> <p>Data preprocessing is a crucial step in the data mining process that prepares raw data for analysis. The key steps include:</p> <p style="padding-left: 40px;">Data Cleaning: This involves handling missing values, eliminating noise, and correcting data inconsistencies to improve data quality.</p> <p style="padding-left: 40px;">Data Integration: Merging data from multiple sources into a single, consistent dataset.</p> <p style="padding-left: 40px;">Data Transformation: Includes normalization and encoding to bring data into suitable formats for mining algorithms.</p> <p style="padding-left: 40px;">Data Reduction: Reduces the volume of data using methods like Principal Component Analysis (PCA) without losing essential information.</p> <p style="padding-left: 40px;">Data Discretization: Converts continuous attributes into categorical ones, which is required by many data mining techniques.</p>	<b>6M</b>
	b)	<p><b>Explain the role of data analytics in improving business intelligence.</b></p> <p>Data analytics supports business intelligence by transforming raw data into meaningful insights. It helps organizations in:</p> <p style="padding-left: 40px;">Identifying trends and patterns</p> <p style="padding-left: 40px;">Forecasting future events using predictive models</p> <p style="padding-left: 40px;">Enhancing decision-making through data visualization and dashboards</p> <p style="padding-left: 40px;">Improving operational efficiency by analyzing performance metrics</p> <p style="padding-left: 40px;">Gaining competitive advantage through strategic insights</p>	<b>6M</b>

2.	a)	<p><b>Define frequent item sets and explain their role in association rule mining.</b></p> <p><b>Definition:</b> Frequent itemsets are combinations of items that appear together in a transactional dataset with high frequency.</p> <p><b>Explanation of the role :</b> They are the cornerstone of association rule mining, which seeks to discover interesting relationships or patterns among items. The frequency of these itemsets is measured using metrics like support, which indicates how often an itemset appears in the dataset. For example, in a retail store, customers frequently buying bread and butter together form a frequent itemset. These patterns help businesses in product placement, inventory management, and targeted marketing.</p>	6M
	b)	<p><b>Provide examples of scenarios where constraint-based association mining is beneficial.</b></p> <p>Constraint-based association mining is particularly useful when the goal is to discover patterns that meet specific business or domain requirements. It helps in focusing the analysis on relevant and actionable results by applying constraints such as item types, price ranges, or quantity limits. Here are some scenarios where it is beneficial:</p> <ol style="list-style-type: none"> <li>1. Retail Industry: A supermarket may be interested only in finding associations among items within the “grocery” or “dairy” category and not across unrelated categories. Constraint-based mining allows focusing the analysis accordingly.</li> <li>2. E-commerce: An online retailer may want to generate association rules only for products that are priced above ₹1000, helping to target premium customers with high-value bundles.</li> <li>3. Healthcare: In a medical dataset, analysts may apply constraints to find associations only among symptoms or medications for patients above a certain age group or with specific conditions, improving diagnostic accuracy.</li> <li>4. Telecommunications: A telecom company may mine association rules only among customers using postpaid services in urban regions to design customized marketing campaigns.</li> <li>5. Banking: A bank may want to explore associations only among customers with high credit scores to identify potential candidates for exclusive financial products.</li> </ol>	6M

3.	a)	<p><b>Define Business Intelligence and explain its significance in modern business.</b></p> <p><b>Definition:</b> Business Intelligence (BI) refers to the technologies, tools, and practices used to collect, integrate, analyze, and present business information. The goal of BI is to support better decision-making by transforming raw data into meaningful and useful insights.</p> <p><b>Significance in Modern Business:</b> In today's competitive and data-driven environment, BI plays a crucial role in enabling organizations to make informed, strategic, and timely decisions. It allows businesses to:</p> <ul style="list-style-type: none"> <li>✓ Understand Trends and Patterns: BI tools help identify historical trends and patterns in sales, customer behavior, and operations.</li> <li>✓ Improve Operational Efficiency: By analyzing internal processes, BI can highlight inefficiencies and suggest improvements.</li> <li>✓ Enhance Decision-Making: Executives and managers can make evidence-based decisions using real-time data dashboards and reports.</li> <li>✓ Support Strategic Planning: BI provides insights that are essential for setting long-term goals and adapting to market changes.</li> <li>✓ Gain Competitive Advantage: Organizations leveraging BI can respond faster to opportunities and threats compared to competitors.</li> </ul>	6M
	b)	<p><b>Discuss challenges that organizations may face during the implementation of BI systems.</b></p> <p>Implementing Business Intelligence (BI) systems can offer substantial benefits, but organizations often encounter several challenges during the process. These challenges include:</p> <ul style="list-style-type: none"> <li>✓ Data Quality Issues: Inaccurate, incomplete, or inconsistent data can lead to unreliable BI outputs. Ensuring high-quality data across all sources is a major hurdle.</li> <li>✓ Data Integration Difficulties: Organizations may struggle to consolidate data from various departments, legacy systems, and external sources into a unified BI platform.</li> <li>✓ High Costs and Resource Requirements: BI implementation can be expensive, involving software licenses, hardware upgrades, and skilled personnel, which can be a burden especially for small or medium enterprises.</li> <li>✓ User Resistance and Lack of Training: Employees may resist using new BI tools due to lack of awareness or fear of change. Without proper training, they may not fully utilize the system's capabilities.</li> <li>✓ Security and Privacy Concerns: BI systems handle sensitive business data. Ensuring robust data security, compliance with regulations, and access control is essential but challenging.</li> <li>✓ Scalability and Maintenance: As organizations grow, BI systems must scale accordingly. Regular updates, maintenance, and performance tuning are necessary but can be complex.</li> </ul>	6M

4.	a)	<p><b>Differentiate between supervised, unsupervised, and reinforcement learning.</b></p> <p>Supervised, unsupervised, and reinforcement learning are the three main types of machine learning. They differ based on the type of data used and the learning approach:</p> <ol style="list-style-type: none"> <li>Supervised Learning: <ul style="list-style-type: none"> <li>Definition: The algorithm is trained on a labeled dataset, where the input data is paired with the correct output.</li> <li>Purpose: To predict outcomes for new data based on learned patterns.</li> <li>Examples: Classification (e.g., email spam detection), Regression (e.g., house price prediction).</li> </ul> </li> <li>Unsupervised Learning: <ul style="list-style-type: none"> <li>Definition: The algorithm works with unlabeled data and tries to find hidden patterns or intrinsic structures.</li> <li>Purpose: To group or organize data without predefined labels.</li> <li>Examples: Clustering (e.g., customer segmentation), Dimensionality Reduction (e.g., PCA).</li> </ul> </li> <li>Reinforcement Learning: <ul style="list-style-type: none"> <li>Definition: The model learns by interacting with an environment and receiving feedback in the form of rewards or penalties.</li> <li>Purpose: To make a sequence of decisions that maximize cumulative rewards.</li> <li>Examples: Game-playing agents, robotics, recommendation systems.</li> </ul> </li> </ol>	6M
	b)	<p><b>Explain the importance of training, validation, and testing phases in machine learning.</b></p> <p>In machine learning, the process of building a robust and accurate model involves three critical phases: training, validation, and testing. Each phase plays a specific role in developing and evaluating the performance of the model.</p> <ol style="list-style-type: none"> <li>Training Phase: <ul style="list-style-type: none"> <li>Purpose: The model learns patterns and relationships in the data during this phase.</li> <li>Process: It uses labeled data (in supervised learning) to adjust its internal parameters (weights) to minimize prediction errors.</li> <li>Importance: This phase builds the foundation for the model's ability to make accurate predictions.</li> </ul> </li> <li>Validation Phase: <ul style="list-style-type: none"> <li>Purpose: Used to fine-tune the model's hyperparameters (e.g., learning rate, number of layers) and to prevent overfitting.</li> <li>Process: The model is evaluated on a separate dataset not seen during training, and adjustments are made accordingly.</li> <li>Importance: Helps in selecting the best version of the model and ensures it performs well on new data without memorizing the training set.</li> </ul> </li> </ol>	6M



		<p>3. Testing Phase:</p> <ul style="list-style-type: none"> <li>○ Purpose: To evaluate the final model's performance and generalization ability on completely unseen data.</li> <li>○ Process: The finalized model is tested using a separate dataset to simulate real-world application.</li> <li>○ Importance: Provides an unbiased estimate of the model's effectiveness in practical scenarios.</li> </ul>	
5.	a)	<p>Discuss methods for transforming raw data into probability distributions.</p> <p>Transforming raw data into probability distributions is an important step in many data mining and machine learning tasks, as it allows for probabilistic modeling, prediction, and anomaly detection. Several methods are used to convert data into suitable probabilistic formats:</p> <ol style="list-style-type: none"> <li>1. Histogram Estimation: <ul style="list-style-type: none"> <li>○ The data range is divided into discrete intervals (bins), and the frequency of data points in each bin is counted.</li> <li>○ This creates an empirical probability distribution by normalizing the frequencies.</li> <li>○ It is simple and effective for visualizing distributions, especially for univariate data.</li> </ul> </li> <li>2. Kernel Density Estimation (KDE): <ul style="list-style-type: none"> <li>○ KDE is a non-parametric method that estimates the probability density function of a random variable.</li> <li>○ It places a smooth kernel (typically Gaussian) on each data point and sums them to form a continuous distribution.</li> <li>○ KDE provides a smoother estimate than histograms and is useful when the underlying distribution is unknown.</li> </ul> </li> <li>3. Parametric Distribution Fitting: <ul style="list-style-type: none"> <li>○ Assumes that data follows a known distribution (e.g., normal, exponential, binomial).</li> <li>○ Parameters (mean, standard deviation, etc.) are estimated using techniques like Maximum Likelihood Estimation (MLE).</li> <li>○ Once fitted, the distribution can be used for probabilistic predictions and statistical inference.</li> </ul> </li> <li>4. Bayesian Methods: <ul style="list-style-type: none"> <li>○ Incorporate prior beliefs with observed data to update probability distributions using Bayes' theorem.</li> <li>○ This is useful when prior knowledge exists and helps in managing uncertainty.</li> </ul> </li> <li>5. Normalization Techniques: <ul style="list-style-type: none"> <li>○ In probabilistic frameworks, raw values can be normalized to sum to one, turning them into a probability distribution.</li> <li>○ This is commonly used in models like Naïve Bayes or in multinomial settings.</li> </ul> </li> </ol>	<b>6M</b>

	b)	<p>Define vector quantization and its role in data compression and clustering.</p> <p><b>Definition: Vector Quantization (VQ)</b> is a technique used in signal processing and data compression where vectors from a large vector space are approximated by a finite set of representative vectors, known as a <i>codebook</i>. Each input vector is mapped to the closest code vector (centroid), effectively reducing the data's complexity.</p> <p>Brief explanation:</p> <p>Role in Data Compression:</p> <ul style="list-style-type: none"> <li>Reduces data size: Instead of storing original vectors, only the index of the nearest code vector is stored.</li> <li>Lossy compression: Some information is lost, but the overall structure is preserved.</li> <li>Used in: Image compression (e.g., JPEG), speech coding, and video compression.</li> </ul> <p>Role in Clustering:</p> <ul style="list-style-type: none"> <li>Similar to k-means clustering: VQ groups input vectors into clusters represented by code vectors.</li> <li>Pattern recognition: Helps in identifying patterns by grouping similar data.</li> <li>Feature reduction: Simplifies data representation for machine learning and classification.</li> </ul>	<b>6M</b>
6.	a)	<p><b>Explain how RBFs and splines can be used for function approximation.</b></p> <p><b>Definition:</b> RBFs are real-valued functions whose value depends only on the distance from a center point, typically written as.</p> $\phi(\ x-c\ ),$ <p>where <math>\phi</math> is the radial function, <math>x</math> is the input, and <math>c</math> is the center.</p> <p><b>Splines:</b></p> <ul style="list-style-type: none"> <li><b>Definition:</b> Splines are piecewise polynomial functions that ensure smoothness at the joints (called knots).</li> <li><b>Types:</b> Linear splines, quadratic splines, and most commonly, cubic splines.</li> <li><b>Cubic spline interpolation:</b> Constructs a smooth curve that passes through all data points with continuous first and second derivatives.</li> <li><b>Function approximation:</b> Splines approximate a function by fitting a polynomial between each pair of data points while maintaining global smoothness.</li> <li><b>Applications:</b> Computer graphics, numerical analysis, curve fitting, and data smoothing.</li> </ul>	<b>6M</b>

	b)	<p>Explain the concepts of interpolation and basic functions.</p> <p><b>Definition:</b> Given a set of known data points <math>(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)</math>, interpolation constructs a function <math>f(x)</math> such that,</p> <p>Purpose: To estimate values at intermediate points between known data values.</p> <p>Types of interpolation:</p> <ul style="list-style-type: none"> <li>• Linear interpolation – connects data points with straight lines.</li> <li>• Polynomial interpolation – fits a single polynomial through all data points.</li> <li>• Spline interpolation – fits piecewise polynomials (splines) with smooth joints.</li> <li>• Radial Basis Function (RBF) interpolation – uses radially symmetric functions to interpolate multidimensional scattered data.</li> </ul>	<b>6M</b>
7.	a)	<p><b>Discuss the k-nearest neighbors (KNN) algorithm and its parameters.</b></p> <p>K-Nearest Neighbors (KNN) is a simple, non-parametric, instance-based machine learning algorithm used for classification and regression tasks.</p> <p>How KNN Works:</p> <ol style="list-style-type: none"> <li>1. Input: A data point xxx to classify or predict.</li> <li>2. Distance Calculation: Compute the distance (commonly Euclidean) between xxx and all points in the training set.</li> <li>3. Select Neighbors: Identify the kkk closest data points (neighbors).</li> <li>4. Prediction: <ul style="list-style-type: none"> <li>○ Classification: Assign the class most common among the kkk neighbors (majority vote).</li> <li>○ Regression: Take the average (or weighted average) of the values of the kkk neighbors.</li> </ul> </li> </ol>	<b>6M</b>
	b)	<p>Define decision trees and their role in supervised learning.</p> <p>A decision tree is a flowchart-like tree structure used in supervised learning for both classification and regression tasks.</p> <ul style="list-style-type: none"> <li>• Definition: A decision tree splits the input data into subsets based on the value of input features, making decisions at internal nodes and leading to output predictions at the leaves.</li> <li>• Structure: <ul style="list-style-type: none"> <li>○ Root node: represents the entire dataset and the first feature split.</li> <li>○ Internal nodes: represent feature-based decisions or tests.</li> <li>○ Branches: represent the outcomes of the decisions.</li> <li>○ Leaf nodes: contain the final prediction (class label or value).</li> </ul> </li> </ul> <p>Advantages:</p> <ul style="list-style-type: none"> <li>• Easy to interpret and visualize.</li> <li>• Handles both numerical and categorical data.</li> <li>• Requires little data preprocessing (no scaling or normalization needed).</li> </ul>	<b>6M</b>

		<p>Disadvantages:</p> <ul style="list-style-type: none"> <li>• Prone to overfitting, especially with deep trees.</li> <li>• Sensitive to small changes in data.</li> <li>• May not perform well compared to more complex models unless combined (e.g., in random forests).</li> </ul>	
8.		<p><b>CASE STUDY:</b></p> <p>David Stella is a marketer of industrial pumps and would like to conduct an analysis on the customer loyalty of the old and new customers of their company. Instead of conducting on their own, the survey, data collection, data cleaning, pre-processing and the maximum possible analysis of classification, clustering and association rule mining; the company has decided to give it for a competitive business analyst. They are seeking for the consultant who can provide all kinds of the services as specified above. They have an offer of 25 lacks as an advocacy fees.</p> <ul style="list-style-type: none"> <li>• If you want to get that big offer what kind of plans do you have to accomplish data collection, data cleaning, pre-processing and the maximum possible analysis of classification, clustering and association rule mining.</li> <li>• Specify the algorithms used for the analysis in detail</li> <li>• State the categorical outcomes expected out of the analysis.</li> </ul> <p>Analysis:</p> <p><b>Key Findings:</b></p> <p>The project aims to analyze customer loyalty for an industrial pump company by conducting data collection, cleaning, pre-processing, and advanced analytics. Key techniques include classification, clustering, and association rule mining. The classification models, such as Logistic Regression and Random Forest, will help predict customer loyalty (loyal vs. non-loyal). Clustering (using K-Means and DBSCAN) will segment customers based on their purchasing behavior, while Association Rule Mining (using Apriori and FP-Growth) will uncover hidden buying patterns and affinities, such as product pairings and frequency of reorders. The project is expected to provide actionable insights into customer retention, behavior, and personalized marketing strategies.</p> <p><b>Problem Statement:</b></p> <p>David Stella, a marketer for industrial pumps, requires a comprehensive customer loyalty analysis that includes data collection, cleaning, pre-processing, and advanced analysis techniques. The challenge is to ensure that the analysis covers multiple aspects of customer loyalty, including classifying loyal customers, identifying purchasing patterns, and segmenting the customer base. The solution must leverage appropriate algorithms and methods, such as classification, clustering, and association rule mining, to generate valuable insights that can inform retention strategies and marketing efforts. A successful solution will position the consultant to secure the ₹25 lakh consultancy offer.</p>	12M

		<p>Phase 1: Data Collection</p> <ul style="list-style-type: none"> <li>• Sources: <ul style="list-style-type: none"> <li>◦ Existing CRM/customer database (purchase history, frequency, feedback).</li> <li>◦ Online customer surveys (using Google Forms or SurveyMonkey).</li> <li>◦ Customer service logs and complaint records.</li> <li>◦ Sales team feedback and vendor interactions.</li> </ul> </li> <li>• Approach: <ul style="list-style-type: none"> <li>◦ Define key loyalty indicators (e.g., repeat purchases, satisfaction scores, referrals).</li> <li>◦ Ensure data diversity: both <i>quantitative</i> (purchase amount, frequency) and <i>qualitative</i> (feedback, survey responses).</li> </ul> </li> </ul> <p>Phase 2: Data Cleaning</p> <ul style="list-style-type: none"> <li>• Tasks: <ul style="list-style-type: none"> <li>◦ Handle missing values (imputation, deletion).</li> <li>◦ Remove duplicates.</li> <li>◦ Identify and correct inconsistencies (e.g., "N/A", "not available").</li> <li>◦ Format standardization (dates, numeric formats).</li> </ul> </li> <li>• Tools: Python (Pandas, NumPy), Excel, OpenRefine</li> </ul> <p>Algorithms For Analysis</p> <ul style="list-style-type: none"> <li>• Logistic Regression – to estimate probability of loyalty.</li> <li>• Decision Trees – interpretable model for understanding key loyalty factors.</li> <li>• Random Forest – improves accuracy and handles overfitting.</li> <li>• Support Vector Machines (SVM) – good for high-dimensional data.</li> <li>• Naive Bayes – fast, especially effective with categorical features.</li> </ul> <p>Categorical Outcomes Expected</p> <ol style="list-style-type: none"> <li>1. Customer Loyalty Classification: <ul style="list-style-type: none"> <li>◦ Loyal</li> <li>◦ Non-loyal</li> <li>◦ At-risk customers</li> </ul> </li> <li>2. Customer Segments (Clustering Outcomes): <ul style="list-style-type: none"> <li>◦ High-value repeat customers</li> <li>◦ One-time buyers</li> <li>◦ Price-sensitive customers</li> <li>◦ New prospects</li> </ul> </li> </ol>	
		1 of 1	

**Code: 22MBA4016** **SET-2**  
**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI**  
**(AUTONOMOUS)**  
**IV Semester MBA Regular & Supplementary Examinations, April, 2025**  
**SOCIAL MEDIA MARKETING**  
**(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs****Max. Marks: 60**

**Answer any Five questions**  
**All questions carry EQUAL marks**  
**Question No. 8 is Compulsory**

1. a) What is Social Media Marketing (SMM) and what is the Role of SMM? 6M  
b) Discuss about the impact of Social Media on the contemporary Consumer Behavior. 6M
2. a) Discuss about the Platforms for Social Advertisements (Ads). 6M  
b) Explain about developing Social Media strategy in the current market scenario. 6M
3. a) Define Brand Positioning and discuss the types of Brand Positioning. 6M  
b) What do you understand by online branding? Explain the reasons why Online Branding Solutions are important for business entities. 6M
4. a) Elaborate about the types of social media content that are built for social media. 6M  
b) Explain how extending research on Social Media takes place. 6M
5. a) Define influencer marketing and illustrate the advantages of influencer marketing. 6M  
b) Discuss about the content that highlights brands, products and services. 6M
6. a) Explain briefly about Social Media Channels such as Facebook, Instagram, Twitter and YouTube. 6M  
b) Discuss about the steps involved in Creating Ad Sets while publishing advertisements online. 6M
7. a) Explain about Social Media Listening and Social Media Monitoring for competitive intelligence and competitive advantage. 6M  
b) What do you mean by Social media Technology, what does it feature, what is its importance to commercial entities and what are the latest developments happening in it? 6M
8. **CASE STUDY:** 12M  

Amar, Akbar and Antoni completed their B.Tech. from a Private Engineering with Electrical, Mechanical and Electronics backgrounds respectively. They are in the process of launching a startup named EVERlast for manufacturing and marketing electrical 2 wheelers. Fortunately, the college management has also come forward to encourage them with required funding and necessary support. They also take the guidance of the Department of Management Science, along with their respective departments, available in their college.

They would like to deliver efficient vehicles for reasonable prices. They do not want to apply traditional advertising tools because they believe very much in the capabilities of social media to reach out to their potential customers.

(a) Develop an appropriate social media strategy for them.  
(b) Explain why they are transitioning to digital marketing from traditional marketing.

**Code: 22MBA4015** **SET-I**  
**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI**  
**(AUTONOMOUS)**  
**II MBA IV Semester Regular & Supplementary Examinations, April,2025**  
**SEARCH ENGINE MARKETING**  
**(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs**

**Max. Marks: 60**

**Answer any Five questions**  
**All questions carry EQUAL marks**  
**Question No. 8 is Compulsory**

1. a) Discuss the benefits and challenges of search engine optimization. **6M**  
b) Elaborate Web Directories Ranking in SEO and how search engines works? **6M**
2. a) Enhance the theoretical concept of Image Optimization and Interactive Media Outbound and Internal Links. **6M**  
b) Write about Social Media Blogging in detail. **6M**
3. a) Elucidate the Google Analytics tool with its benefits. **6M**  
b) Explain the types of keywords, Head Body, Long Tail and the sources of keywords. **6M**
4. a) Discuss the important Factors for Link Building in detail. **6M**  
b) How do you determine the Networking with Influencers? **6M**
5. a) Explore Content Consideration Factors with its impact. **6M**  
b) Discuss the Tools Used for Content development. **6M**
6. a) Describe essential utilities and toolsets for an effective SEO hub. **6M**  
b) Write about Dare Boost Content Building and Optimization. **6M**
7. a) Explore the Evolution of Search Engines concept and its implementation. **6M**  
b) How Link Building, Link Removal and Link Analysis Majestic is done. **6M**

**Food Digital Marketing:**

Ben and Kali have turned their love of baking into a carrot cake bar business. They prepare their product in a community commercial kitchen and have obtained their Safe Food for Canadians Licence. This allows them to sell their product outside of Manitoba to other provinces across Canada. Although farmers' markets and in-store retail markets have been producing a modest return on investment (ROI), they felt that they needed to reach out to new customers. They decided they needed to come up with a plan to get their business and product online. They believe the bar is a great product for busy families and could conveniently be purchased online and easily shipped.

*Goal:* To expand exposure to a larger client base and increase return on investment (ROI).

*Objective:* To create a digital marketing campaign to promote their product and increase sales by 20 per cent in Year One. Ben and Kali considered various online platforms such as Facebook, Instagram, YouTube, TikTok and Twitter for marketing their bars. Recognizing they do not have the time to keep a number of sites up-to-date, they decided to focus their energies on two platforms.

*Research:* Based on their sales at farmers' markets, Ben and Kali know that customers aged 18 to 34 purchase their product most often, with women purchasing their product slightly more often than men. The type of person that would like this product is an active person who has one or more devices in the household that are used multiple times in a day. Retail sales for their product seemed to peak in October for their sales region.

*Competitor Research:* The couple looked at competitors' marketing activities and products where they are found, when they post, how often they post and where they get the most interaction, shares, likes and comments. Although some similar food businesses use multiple social media platforms, Ben and Kali felt comfortable in choosing to focus only on two: Facebook and Instagram. Facebook and Instagram are two of the top three most-used social media platforms worldwide (YouTube rounds out the top three).

- a. Analyze the case and give your recommendations.



**Answer any Five questions  
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Question No. 8 is Compulsory**

1. Define Entrepreneur and explain characteristics of an Entrepreneur. **12 M**
2. Entrepreneurship development can go a long way in solving the economic and non-economic problems in developing country like India. Do you agree? Explain. **12 M**
3. a) Discuss the role of NIESBUD in promoting entrepreneurs. **6 M**  
b) Discuss various functions performed by DIC's for entrepreneurs. **6 M**
4. a) Enumerate the process of Starting an MSME. **6 M**  
b) What are various methods of generating ideas? **6 M**
5. Explain various long term and short term financial resources available for entrepreneurs **12 M**
6. a) Explain the Essence of e-Entrepreneurship in the present digital world. **6 M**  
b) Write in brief about Problems and prospects of e-Entrepreneurs in INDIA. **6 M**
7. In detail discuss various Problems and prospects of MSME in India. **12 M**
8. **CASE STUDY:** **12 M**

Govinda has been in his own plumbing business for the past three years. He is now thirty three old, married to Sharada, and has two children, aged nine and six. He lives on the

outskirts of the city in a home that he and Sharada built themselves, just after they got married, twelve years ago. The home is a large one built on a hectare of land, but has modest mortgage that dates back to the beginning of his business. Prior to starting his business, he was a master plumber with a large firm. Due to recession in the firm, he was laid off and took various domestic plumbing jobs to make ends meet. Finally, three years ago, he made the breakthrough and started his own full time business. It was a bit slow in the beginning, but he now has more business than he can handle and is starting to complain about not having enough time for the holidays during summer. He owns all his equipment, including a new van for business. His net income this year was Rs. 2,50,000.

When talking with Govinda, it soon becomes evident that he had to find new benefit plans to replace the ones provided by the union and he was uncertain how much he could earn. He says he is extremely fortunate to have the assistance of Sharada who acts as the office manager handing bills, dealing with some of the needs of the customers, etc. He was quite unsure about the specialty he should work in, but has found that the repeat business from satisfied house builders has kept him very busy. His chief complaint right now is trying to get a part time assistant-someone who would be available when needed and who could be trusted to do a reliable job. He puts in a long day on the job and then finds that then he comes home he has to again attend to the paperwork of work scheduling, bidding on new projects, payroll and reporting to the tax department, etc. He says, ‘at times I do not know why I got into this. But then, when I think about it, there is something that keeps me going....’

**Questions:**

- (a) What are the main traits and skills that got Govinda into his own business and also served to keep him in it?
- (b) What is your opinion of Govinda’s level of commitment of his plumbing business?
- (c) Did Govinda start his full-time business on the basis of the need that house builders had for his services, or on the basis that he needed a larger income?

**Code: 22MBA4006**  
**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI**  
**(AUTONOMOUS)**  
**II MBA IV Semester Regular & Supplementary Examinations, April, 2025**  
**FINANCIAL DERIVATIVES**  
**(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs**

**Max. Marks: 60**

**Answer any Five questions**  
**All questions carry EQUAL marks**  
**Question No. 8 is Compulsory**

1. a) Bring out the historical development of financial derivatives. **06M**  
b) Distinguish between forward contracts and future contracts with suitable examples. **06M**
2. a) Explain the various uses of forward contract with suitable examples. **06M**  
b) Write a detailed note on the growth pattern of forward contract in Indian stock market. **06M**
3. a) Explain the important characteristics of future prices with examples. **06M**  
b) Write a detailed note on devising a hedging strategy. **06M**
4. a) Write short note on brief history of options contract in Indian stock market. **06M**  
b) How does an option on futures contract differ from an option on physicals? Explain. **06M**
5. a) Discuss the various applications of Black Scholes option pricing model. **06M**  
b) Write a detailed note on implied price volatility and its implications in option pricing. **06M**
6. a) Discuss the term volatility. What are various methods of measuring volatility? **06M**  
b) Write short note on Generalization of two-step binomial tree of option pricing. **06M**
7. a) What is swap contract? What are the various motivations underlying swap contract? **06M**  
b) Explain the mechanism of interest rate swaps, and risks inherent there in? **06M**

8. **CASE STUDY:**

**12M**

The following are prices of options traded on Microsoft Corporation, which pays no dividends.

The stock is trading at \$83, and the annualized riskless rate is 3.8%. The standard deviation in  $\ln$  stock prices (based upon historical data) is 30%.

Estimate the value of a three-month call, with a strike price of 85 Using the inputs from the Black-Scholes model, Specify how you would replicate this call.

Code: 22MBA4009

**SET-I**

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)**

**II MBA IV Semester Regular & Supplementary Examinations, April, 2025  
GLOBAL HUMAN RESOURCE MANAGEMENT  
(MASTER OF BUSINESS ADMINISTRATION)**

**Time: 3 Hrs**

**Max. Marks: 60**

**Answer any Five questions  
All questions carry EQUAL marks  
Question No. 8 is Compulsory**

- |    |    |   |     |
|----|----|---|-----|
| 1. | a) | Define Global HRM, What are the objectives Global HRM?  | 6M  |
|    | b) | Write a note on Drivers of Globalisation.   | 6M  |
| 2. | a) | Differentiate HRM and GHRM.   | 6M  |
|    | b) | Define culture and explain the characteristics of culture.  | 6M  |
| 3. | a) | How do you understand human behavior in global perspective?   | 6M  |
|    | b) | Discuss in detail on Hofstede's Cross Cultural Difference.  | 6M  |
| 4. | a) | Explain the procedure of recruitment of staff in International Assignment   | 6M  |
|    | b) | Explain cross-culture training methods.   | 6M  |
| 5. | a) | What are the approaches of globalization compensation?  | 6M  |
|    | b) | What are the Key Components of an International Compensation Programme?   | 6M  |
| 6. | a) | Explain in detail about performance appraisal of global employee.   | 6M  |
|    | b) | Discuss the industrial relations under global scenario.   | 6M  |
| 7. | a) | What are the strategies you can suggest to retain the international employees.  | 6M  |
|    | b) | Explain the process of Monitoring HR practices.   | 6M  |
| 8. |    | <b>CASE STUDY:</b><br>Tech Globe Inc., a US-based tech giant, is expanding rapidly into Asia and Europe. The company needs to decide how to staff key leadership and technical positions in its new subsidiaries in Japan, Germany, and India. They are considering several staffing options and facing challenges related to cost, culture, and control. | 12M |

**Questions:**

- a. What are the risks and benefits of using expatriates in high-context cultures?
- b. How can Tech Globe ensure knowledge transfer across borders?

**Answer any Five questions  
All questions carry EQUAL marks  
Question No. 8 is Compulsory**

1. a) What is Business Intelligence? Or What is the main purpose of business intelligence? **6M**  
b) Elaborate Data warehousing? Describe the characteristics of Data warehouse. **6M**
2. a) Describe OLTP and OLAP. How meta data models are used in DM. illustrate. **6M**  
b) What is Multidimensional analysis? Differentiate MOLAP and ROLAP. **6M**
3. a) Differentiate dimension tables vs fact tables. **6M**  
b) What is Data Cube? Explain in detail the Data Cubes with examples. **6M**
4. a) What is Data Mining? Explain KDD process. **6M**  
b) What is data mining? List the real-life applications of data mining. **6M**
5. a) Explain the ant colony optimization used for Market Basket Analysis. **6M**  
b) What is text mining? Explain different approaches to text mining. **6M**
6. a) Explain Big data. Describe the business applications of Big data. **6M**  
b) What is meant by KPI? How the different metrics helps business activity monitoring (BAM) **6M**
7. a) Explain how Business Intelligence tools can be used by Banks for historical analysis, performance budgeting, business performance analytics, executive dashboards, marketing customer profitability and risk management? **6M**  
b) Discuss how data mining techniques used to analysis customer Perception towards online shopping. **6M**

8. **CASE STUDY:**

**12M**

BI is trending and highly used domain that combines business analytics, data visualization, data mining, and multiple other data related operations. Business use the best practices coming under business intelligence to mine their data and extract the information essential to make significance business decisions. Simply automating processes and centralizing data without a solid understanding of how the foundation data structure impacts the ability to perform business analytics will result in lackluster Business Intelligence.

A major Indian advertiser named as Getme come to you because of your in depth understanding of how to structure data to provide powerful and actionable Business Intelligence. They have all of their data captured in a database, but because the data is not structured appropriately, they are unable to pull meaningful and actionable analytics from the data. The advertiser want analytics that will enable them to gain a better understanding of the types of deliverables they are buying, how deliverables and costs are broken down by business unit, which agencies are performing well relative to cost, and much more.

Questions:

- a. What business intelligence strategies including tools and techniques will you apply to Address the needs of GetMe?
- b. What kind of visualization representation of their data and dashboard will you provide?