Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP115

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February – 2025

OPERATIONS RESEARCH

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Solve the L.P.P. by using the graphical method: $Max.Z = 80x_1 + 120x_2$ *Subject to* $x_1 + x_2 \le 9$; $x_1 \ge 2$; $x_2 \ge 3$; $20x_1 + 50x_2 \le 360$; $x_1, x_2 \ge 0$.	10M	1	2
	OR			
Q.1(B)	Solve the following L.P.P. by Simplex method: $Max.Z = 4x_1 + 10x_2$ *Subject to* $2x_1 + x_2 \le 50$, $2x_1 + 5x_2 \le 100$, $2x_1 + 3x_2 \le 90$, $x_1, x_2 \ge 0$	10M	1	4
Q.2(A)	Determine the optimum transportation cost for the following Transportation problem:	10M	2	4

	D1	D2	D3	D4	Availability
P1	23	27	16	18	30
P2	12	17	20	51	40
P3	22	28	12	32	53
Requirement	22	35	25	41	123

OR

Q.2(B) Solve the following assignment problem: 10M 2 3

	I	II	III	IV	V
A	3	5	10	15	8
B	4	7	15	18	8
C	8	12	20	20	12
D	5	5	8	10	6
E	10	10	15	25	10

Q.3(A) Explain the following: 10M 3 2
a) Dominance property
b) Two person zero sum game
c) Rules to determine saddle point

OR

Q.3(B) Solve the following game by using dominance property: 10M 3 3

	A	B	C	D
1	3	2	4	0
2	3	4	2	4
3	4	2	4	0
4	0	4	0	8

Q.4(A) A fleet owner finds, from his past records, that the cost per year of running vehicle and resale value per year as shown below and whose purchase price is Rs. 7000 — 10M — 4 — 5

Year	1	2	3	4	5	6	7	8
Running Cost (Rs.)	900	1200	1600	2100	2800	3700	4700	5900
Resale value (Rs.)	4000	2000	1200	600	500	400	400	400

Determine when the vehicle should be replaced.

OR

Q.4(B) A bakery keeps stock of popular brand of bread. Previous experience indicates the daily demand as given below: — 10M — 4 — 3

Daily demand: 0 10 20 30 40 50
Probability: 0.01 0.20 0.15 0.50 0.12 0.02

Consider the following sequence of random numbers:
48, 78,19,51,56,77,15,14,68,8
Using the above sequence, simulate the demand for the next 10 days.
(i). Find out the stock situation if the owner of the bakery decides to make 30 pieces of bread every day.
(ii). Estimate the daily average demand for bread based on simulated data.

Q.5(A) The following table gives the activities of construction project and duration: — 10M — 5 — 3

Activity	1-2	1-3	2-3	2-4	3-4	4-5
Duration (days)	20	25	10	12	5	10

Draw the network for the project. Find the critical path and project duration.

OR

Q.5(B) A tollgate operates on a freeway where cars arrive according to Poisson distribution with mean frequency of 1.2 cars/ min. The time of completing payment follows an exponential distribution with a mean of 20 seconds. Find — 10M — 5 — 3
(i) the idle time of counter,
(ii) average number of cars in the system,
(iii) average number of cars in the queue,
(iv) average time that car spends in the system,
(v) Average time that car spends in the queue.

Q.6 **CASE STUDY** — 10M — 5 — 5

A small project is composed of seven activities whose time estimates in weeks are given below:

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Optimistic time	1	1	2	1	2	2	3
Most likely time	1	4	2	1	5	5	6
Pessimistic time	7	7	8	1	14	8	15

Find the critical path. What is the probability that the project will be completed within four weeks earlier than expected?

END

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP116

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

STRATEGIC MANAGEMENT

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss the importance of creating sustainable mission statement? While formulating the mission statement for an organization which aspects will you consider?	10M	1	3
	OR			
Q.1(B)	Explain the steps involved in Strategic Decision-Making Process	10M	1	2
Q.2(A)	Explain GE Nine Cell model. What is the advantage of GE Nine Cell over the BCG matrix?	10M	2	2
	OR			
Q.2(B)	Critically evaluate is TOWS matrix?	10M	2	3
Q.3(A)	The low-cost leadership strategy at times enables the firm to defend itself against each of five competitive forces. Explain.	10M	3	3
	OR			
Q.3(B)	Explain the Retrenchment Strategies?	10M	3	2
Q.4(A)	Discuss the role of budgets and support systems in strategy implementation. How do financial planning and management systems contribute to the successful execution of a strategy?	10M	4	3
	OR			
Q.4(B)	Describe the role of planning and resource allocation in the implementation of strategy. How can efficient resource management enhance the execution of strategic goals?	10M	4	3
Q.5(A)	Appraise the functions under strategic surveillance.	10M	5	3
	OR			
Q.5(B)	Explain any three methods/techniques used in strategic control systems, giving examples.	10M	5	2
Q.6	**CASE STUDY** Southwest Airlines has long been one of the stand-out performers in the U.S. airline industry. It is famous for its low fares, which are often some 30% lower than those of its major rivals. These are balanced by an even lower cost structure, enabling it record superior profitability even in bad years as 2002, when the industry faced slumping in the wake of the September 11 terror attacks. Indeed, from 2001 to 2005, quite possibly the worst four years in the history of the airline while every other major airline lost money, Southwest made money every year and earned an ROIC of 5.8 %. Even in 2008, an awful year for airlines, Southwest made a profit and earned ROIC of 4%. Southwest operates somewhat differently from its competitors. While operators like American Airlines and United Airlines route passengers through hubs, Southwest Airlines flies point-to-point often through smaller airports. By competing in a way that other airlines do not, Southwest has found that it can capture	10M	5	5

enough demand to keep its planes full. Moreover, because it avoids many hubs, Southwest has experienced fewer delays. In the first eight months of 2008, Southwest planes arrived schedule 80% of the time, compared to 76% at United and 74% at Continental. Southwest flies only one type of plane, the Boeing 737. This reduces training costs, maintenance costs, inventory costs while increasing efficiency in crew and flight scheduling. The operation is nearly with no seat assignments, which reduces cost and back-office accounting functions. There are no meals or movies in flight and the airline will not transfer baggage to other airlines, reducing the need for baggage handlers. Southwest also has high employee productivity. One-way airlines measure employee productivity by the ratio of employees to passengers carried. According to figures from company 10-K statements, in 2008 Southwest had an employee-to- passenger of 1 to 2,400, the best in the industry. By comparison the ratio at United Airlines was 1 to 1,175, at Continental, it was 1 to 1,125. Southwest devotes enormous attention to the people it hires. On average, the company hires only 3% of those interviewed in a year. When hiring, it emphasizes teamwork and a positive attitude.

Southwest rationalizes that skills can be taught, but a positive attitude and willingness to pitch in cannot. Southwest also creates incentives for 1ts employees to work hard. Al employees are covered by a profit-sharing plan, and at cast 25% of an employee's share of the profit-sharing plan has to be invested 1n Southwest Airlines stock. This gives rise to a simple formula: the harder Employees work, the more profitable Southwest becomes, and the richer the employees get. The results are clear. At other airlines, one would never see a pilot helping to check passengers onto the plane. At Southwest, pilots and flight attendants have been known to help clean the aircraft and check in passengers at the gate. They do this to turn around an aircraft as quickly as possible and get it into the air again because an aircraft does not make money while it is on the ground. This flexible and motivated workforce leads to higher productivity and reduces the company's need for more employees. Because Southwest flies point-to-point rather than through congested airport hubs, there is no need for dozens of gates and thousands of employees to handle banks of flights that come in and then disperse within a two-hour window, leaving the hub empty until the next flights a few hours later. The result: Southwest can operate with far fewer employees than airlines that fly through hubs.

Questions (a) How would you characterize the business model of Southwest Airlines? How does this differ from the business model used at many other airlines, such as United and American Airlines?

(b) Identify the resources, capabilities and distinctive competencies of Southwest Airlines. How do South West's resources, capabilities and distinctive competencies translate into superior financial performance?

*****END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MBAP505

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

INTERNATIONAL BUSINESS

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain Hofstede's cultural dimensions model with suitable examples, highlighting its application in international business.	10M	1	2
	OR			
Q.1(B)	Analyze the benefits of Porter's National Competitive Advantage Theory.	10M	1	4
Q.2(A)	Differentiate between Balance of Trade and Balance of Payments using suitable examples.	10M	2	4
	OR			
Q.2(B)	Identify the different types of exchange rate systems and discuss their advantages and disadvantages with examples.	10M	2	2
Q.3(A)	Discuss the role and implications of tariff and non-tariff barriers in international business.	10M	3	3
	OR			
Q.3(B)	Classify the major trade blocs in the current international trade environment and discuss their significance.	10M	3	4
Q.4(A)	Discuss and describe the different stages of the product life cycle in a global context.	10M	4	2
	OR			
Q.4(B)	Discuss the importance of Human Resource Management Development (HRMD) in global businesses and elaborate on key strategies for its effective implementation.	10M	4	2
Q.5(A)	Discuss the role and importance of economic zones in enhancing int trade and development.	10M	5	2
	OR			
Q.5(B)	Highlight the key features of the current Indian Foreign Trade Policy and discuss its impact on international trade.	10M	5	4
Q.6	**CASE STUDY**	10M	4	5

Economists have long argued that free trade produces gains for all countries that participate in a free trading system, but as the next wave of globalization sweeps through the U.S. economy, many people are wondering if this true, particularly those who stand to lose their jobs as a result of this wave of globalization. In the popular imagination for much of the past quarter century, free trade was associated with the movement of low-skill, blue collar manufacturing jobs out of rich countries such as the US and toward low-wage countries – textiles to Costa Rica, athletic shoes to the Philippines, steel to Brazil, electronic products to Malaysia, and so on. While many observers bemoaned the "hollowing out" of U.S. manufacturing, economists stated that high-skilled and high-wage, white collar jobs associated with the knowledge-based economy would stay with the US. Computers might be assembled in Malaysia, so the argument went, but they would continue to be designed in Silicon Valley by high skilled U.S. engineers.

Recent developments have some people questioning this assumption. As the global economy slowed after 2000 and corporate profits slumped, any American companies responded by moving white-collar "knowledge based" jobs to developing nations where they could be performed for a

fraction of the cost. During the long economic boom of the 1990s, Bank of America had to compete with other organizations for the scarce talents of information technology specialists driving annual salaries to more than $100,000. But with business under pressure, between 2002 and early 2003 the bank cut nearly 5,000 jobs from its 25,000 strong U.S.-based information technology workforce. Some of these jobs are being transferred to India, where work that costs $100 an hour in the United States can be done for $20 an hour.

One beneficiary of Bank of America's downsizing is Infosys Technologies Ltd., at Bangalore, India. An IT firm where 250 engineers now develop information technology applications for the bank. Other Infosys employees are busy processing home loan applications for Green point Mortgage of Novato, California. Nearby in the offices of another Indian firm, Wipro Ltd., five radiologists interpret 30 CT scans a day for Massachusetts General Hospital that are sent over the Internet. At yet another Bangalore business, engineers earn $10,000 a year designing leading-edge semiconductor chips for Texas Instruments. Nor is India the only beneficiary of these changes. Accenture, a large U.S. management consulting and information technology firm recently moved 5,000 jobs in software development and accounting to the Philippines. Also in the Philippines, Procter & Gamble employs 650 professionals who prepare the company's global tax returns. The work used to be done in the US, but now it is done in Manila, with just final submission to local tax authorities in the US and other countries handled locally.

Some architectural work also is being outsourced to lower-cost locations. Flour Corp., a California-based construction company, employs some 1,200 engineers and draftsmen in the Philippines, Poland, and India to turn layouts of industrial facilities into detailed specifications. For a Saudi Arabian chemical plant Flour is designing, 200 engineers based In the Philippines earning less than $3,000 a year collaborate in real time over the internet with elite U.S. and British engineers who make up to $90,000 a year. Why does Flour do this? According to the company, doing so reduces the prices of a project by 15%, giving the company a cost-based competitive advantage in the global market for construction design. The companies that outsource such skilled jobs clearly benefit from lower profits. American consumers benefit from the lower prices made possible by global outsourcing. Developing nations such as India and the Philippines with a good supply of well-educated, skilled, and (by global standards) low-cost labor also benefit. However, some observers wonder whether the United States will suffer from the loss of highly-skilled and highly-paying jobs, and whether this trend will not ultimately depress the salaries of white-collar employees nationwide. And if that happens, might not this have negative implications for the entire U.S. economy?

Questions:

(i) Is there a difference between the transference of high-paying, white-collar jobs, such as computer programming and accounting, to developing nations, and low-paying, blue-collar jobs? If so, what is the difference?

(ii) What should government do anything to stop the flow of white-collar jobs to countries such as India?

END

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MBAP509

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Define entrepreneurship and explain the challenges that are facing by Women entrepreneurs.	10M	1	2
	OR			
Q.1(B)	Compare and contrast different types of entrepreneurships, highlighting their advantages and disadvantages.	10M	1	4
Q.2(A)	Discuss the Objectives and elements of business planning in entrepreneurship.	10M	2	2
	OR			
Q.2(B)	Explain the importance of different financial institutions that are offering financial schemes for entrepreneurs with suitable examples.	10M	2	2
Q.3(A)	Evaluate the roles and responsibilities of Project managers with suitable examples.	10M	3	4
	OR			
Q.3(B)	Compare and contrast different project management methodologies, such as agile and waterfall.	10M	3	2
Q.4(A)	Define project financing and explain various types of project financing.	10M	4	2
	OR			
Q.4(B)	Compare and contrast different types of financing available to entrepreneurs, including venture capital, angel investors, and crowdfunding.	10M	4	3
Q.5(A)	Design a comprehensive project implementation framework to support entrepreneurs in developing countries, incorporating training, funding, and mentorship components.	10M	5	4
	OR			
Q.5(B)	Explain the problems involved in project implementation.	10M	5	3
Q.6	**CASE STUDY** SAS Inc was established in the 1970's SAS practices employee friendly policies. Its co-founder and CEO, Dr. Jim Goodnight (born on 6 January, 1943) has created employee-centric corporate culture. He manages the largest and most successful private software company in the world, SAS institute. He is amongst the richest Americans. The company has created a unique corporate culture. To create a satisfied work force, SAS	10M	5	5

Inc has always focused on two aspects of work culture --work life balance and work life benefits. The company believes that satisfied employees result in satisfied customers. Employees enjoy the perks offered by the company. The company considers employee perks as long-term investment in creative capital and not as employee retention costs. Employee-oriented policies contribute to increased job satisfaction and reduced employee turnover. Company has been enjoying sound position due to well-satisfied employees and loyal customers. The company has succeeded in creating the work place as the place to enjoy work. Analysts say that this philosophy had provided SAS with a competitive edge even during the economic crisis. On 18 Jun 2010, SAS was named No. 1 on Fortune's '100 Best Companies to work for' list for 2010.

Moreover, the company CEO did not want to make the company public even if that meant more profits for the company. According to Goodnight, converting private company into public company would destroy the company's employee-focused organizational culture because it would have to work under the pressure of shareholders. Experts suggest that the SAS business model depicts that employee loyalty and customer satisfaction is interlinked, and that this is the secret behind the company's success. The company does everything possible to manage work life balance. However, critics contend that many of the work life initiatives and employee perks are unnecessary expenses. Too much employee-centric policies and practices affect objectively in operations. The basis issues are: 'How much should the company be employee-oriented?'

Questions:

1. What is the employee centric corporate culture?
2. How does the company view the employee perks and benefits?
3. What is the secret of success of SAS Inc?
4. Do you think that too much employee orientation is fair? Why?

*****END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MBAP401

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

SECURITY ANALYSIS AND PORT-FOLIO MANAGEMENT

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Describe the role of SEBI in primary and secondary markets. How do SEBI's regulations affect markets like BSE, NSE, MSE, and NCDEX?	10M	1	2
	OR			
Q.1(B)	Discuss the changes in trading from traditional methods to online, mock, and virtual platforms. What are the benefits and challenges of these new methods?	10M	1	2
Q.2(A)	You have the returns of two stocks, C and D, and the market index over five years. You want to calculate the Beta and the correlation coefficient of stock C and stock D with the market index.	10M	2	4

Year	Stock C Returns (%)	Stock D Returns (%)	Market Index Returns (%)
1	14	10	12
2	16	11	14
3	13	12	13
4	15	9	11
5	17	10	15

1. Calculate the **Beta** of stock C and stock D relative to the market index.
2. Calculate the **correlation coefficient** between the returns of stock C and stock D.

OR

Q.2(B)	Define Risk? Distinguish between systematic risk and unsystematic risk. Also explain various types of systematic risk.	10M	2	2
Q.3(A)	Describe the parts of Fundamental Analysis: Economy, Industry, and Company analysis. How do they work together to find a company's true value? Provide examples.	10M	3	3
	OR			
Q.3(B)	Explain Dow Theory in Technical Analysis. Why is it important for understanding market trends and investor behavior? How is it used today?	10M	3	2
Q.4(A)	A portfolio consists of two stocks, D and E. The following data is available:	10M	4	4

Stock	Expected Return	Beta
D	9%	1.1
E	14%	1.6

The expected market return is 12%, and the risk-free rate is 5%. Using the Capital Asset Pricing Model (CAPM), calculate the expected return of the portfolio. If the actual return of the portfolio is 13%, determine if it is underpriced or overpriced.

OR

Q.4(B)	Analyze the Sharpe Single Index Model and Arbitrage Pricing Theory. How do these models contribute to asset pricing and risk management?	10M	4	4

Q.5(A)	Discuss the Constant Dollar Value Plan and the Constant Ratio Plan. How do these strategies help in managing investment portfolios?	10M	5	2

OR

Q.5(B)	Consider an investment portfolio with the following characteristics:	10M	5	3

Metric	Value
Portfolio Return	16%
Risk-Free Rate	4%
Portfolio Standard Deviation	12%
Portfolio Beta	1.1
Market Return	14%

Calculate the Sharpe Ratio, Treynor Ratio, Jenson's ratio and for the portfolio.

Q.6 **CASE STUDY** 10M 2 5

The following data give the Market return and the sun company scrip's return for a particular period.

Months	Bajaj Stock Return (Ri)	Ashok Leyland Return (Ri)	NSE Index
Jan	0.50	1.25	0.30
Feb	0.60	0.45	0.60
March	0.50	0.80	0.40
April	0.60	1.20	0.50
May	0.80	0.95	0.60
June	0.50	0.85	0.30
July	0.80	0.50	0.70
Aug	0.40	0.55	0.50
Sept	0.70	1.25	0.60

1. What is the Beta value of the Sun company scrip?
2. If the market return is moves up by 8% what would be the
3. Bajaj and Ashok Leyland return.

END

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP408

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

HR ANALYTICS

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain how HR analytics helps organizations make informed decisions regarding workforce planning and employee performance management.	10M	1	2
	OR			
Q.1(B)	Discuss how HR analytics integrates with technologies like cloud computing, data science, and mobile data to address challenges set by social data explosion.	10M	1	2
Q.2(A)	Evaluate how people research and analytics practices can improve decision-making within organizations. Provide examples of specific HR metrics that can be used in this process.	10M	2	5
	OR			
Q.2(B)	Design a strategy to assess HR effectiveness using key metrics such as engagement rate, employee turnover rate, and cost of HR per employee. Include a plan for collecting and analyzing this data.	10M	2	4
Q.3(A)	Explain how turnover rate and turnover cost impact organizational productivity and employee retention.	10M	3	2
	OR			
Q.3(B)	Analyze the relationship between time-to-productivity and cost per hire. How can reducing time-to-start influence these metrics? Provide examples.	10M	3	4
Q.4(A)	Analyze the relationship between Training Participation Rate and Training Return on Investment (ROI). How can organizations optimize their Training Spend to improve ROI?	10M	4	4
	OR			
Q.4(B)	Design a framework to measure Human Capital Readiness using metrics such as Competency Rate, Training Hours, and Training Cost per Employee. How would you ensure the framework aligns with organizational goals?	10M	4	6
Q.5(A)	What are the key components of Cost to Company (CTC) in India, and how does it differ from gross salary and net salary?	10M	5	1
	OR			
Q.5(B)	Calculate the net salary of an employee with the following details: CTC: ₹10,00,000 Basic Salary: 40% of CTC HRA: 20% of CTC Allowances: ₹1,00,000 Deductions: 12% of basic salary for EPF, ₹50,000 for taxes, and ₹10,000 for Employee State Insurance (ESI).	10M	5	3
Q.6	**CASE STUDY**	10M	5	3

ABC Pvt. Ltd., a mid-sized IT services company, has recently onboarded a new HR manager, Priya. She has been tasked with restructuring the company's salary structure to make it more transparent and employee-friendly. Priya begins by analyzing the components of an employee's Cost to Company (CTC), which includes Basic Salary, House Rent Allowance (HRA), Special Allowances, Provident Fund (PF) contributions, Gratuity, and Employee State Insurance (ESI).

Additionally, she must address leave benefits, National Pension Scheme (NPS) contributions, and how the Universal Account Number (UAN) facilitates employee services provided by the Employees' Provident Fund Organisation (EPFO). Priya also needs to ensure the payroll system complies with Indian labour laws and integrates quantitative tools such as percentiles, cost-benefit analysis, and comp ratios to evaluate compensation packages.

Analysis Questions:

1. How can Priya use cost-benefit analysis to optimize the company's CTC structure while balancing employee satisfaction and operational costs?
2. What role do percentiles and comp ratios play in ensuring equitable compensation across employees, and how can Priya apply these tools in restructuring the payroll system?

*****END*****

SET-1

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP429

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS ANALYTICS AND DATA MINING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss the importance of analyzing uncertainty in decision-making and explain how tools like What-If Analysis, Data Tables, Scenario Manager, and Goal Seek can be used to address uncertainty in business problems.	10M	1	4
	OR			
Q.1(B)	Explain the evolution and scope of Business Analytics in modern businesses.	10M	1	4
Q.2(A)	Briefly outline the steps involved in hypothesis testing, and explain how statistical software (e.g., Excel, SPSS, or Python) can be used to conduct such tests efficiently in a business scenario.	10M	2	3
	OR			
Q.2(B)	Explain the difference between descriptive and inferential statistics and their respective roles in analyzing business data.	10M	2	2
Q.3(A)	A company's monthly production output for the past 6 months is as follows (in units): 500, 520, 480, 510, 530, and 550. (a) Using exponential smoothing with a smoothing constant (α) of 0.4, calculate the forecast for the 7th month. Assume the initial forecast for the first month was 500 units. (b) Discuss how changing the smoothing constant (α) would affect the forecast and its responsiveness to changes in production levels.	10M	3	3
	OR			
Q.3(B)	Explain the components of a time series (trend, seasonality, cyclical, and irregular components) and their significance in forecasting. Discuss how decomposition models and smoothing techniques, such as moving averages and exponential smoothing, are used to make predictions in business scenarios. Provide examples to illustrate their applications.	10M	3	4
Q.4(A)	Explain the scope of data mining in modern business analytics. Discuss the importance of data exploration and reduction as a preparatory step in data mining.	10M	4	4
	OR			
Q.4(B)	A retail company wants to predict whether to open a new store based on certain criteria. The dataset is as follows:	10M	4	4

Market Size	Competition Level	Local Supplier	Decision
Medium	Medium	Yes	?
Big	High	Yes	Yes
Medium	High	No	Yes
Medium	Medium	No	No
Small	Low	Yes	Yes
Big	Low	No	Yes
Medium	High	Yes	No

Small	Medium	No	No
Big	High	Yes	No
Medium	Medium	No	Yes

Using the **CART algorithm**, construct a decision tree based on the dataset and predict the **Decision** for the market with the conditions: **Medium Market Size**, **Medium Competition Level**, and **Local Supplier = Yes**. Clearly show the steps involved, including Gini index calculations, splits, and the final tree structure.

Q.5(A) A healthcare insurance company is analyzing its customer data to improve its risk management and marketing strategies. The company has information on customer demographics (age, income, family size), health risk factors (smoking habits, pre-existing conditions), and insurance claims history. The company aims to: 10M 5 5

1. Segment Customers**:** Using clustering techniques, group customers into different categories based on their demographics and claims history to create targeted marketing campaigns.
2. Risk Assessment**:** Use a decision tree to predict the likelihood of a customer filing a high insurance claim based on their health risk factors and claims history.
3. Simulation for Risk Analysis**:** Perform a Monte Carlo simulation to assess the overall risk exposure if the company offers new health insurance plans for high-risk customers.

Explain how you would construct a decision tree to predict high insurance claim risks. What input variables would you select, and how would you evaluate the performance of the tree?

OR

Q.5(B) A person is riding a perfectly maintained car without on a clear weather through bad road with in high traffic. Will he met with an accident? Give your answer on the basis of given dataset with support of Bayes theorem. 10M 5 4

SNo.	Weather condition	Road condition	Traffic condition	Engine problem	Accident
1	Rain	bad	high	no	yes
2	snow	average	normal	yes	yes
3	clear	bad	light	no	no
4	clear	good	light	yes	yes
5	snow	good	normal	no	no
6	rain	average	light	no	no
7	rain	good	normal	no	no
8	snow	bad	high	no	yes
9	clear	good	high	yes	no

Q.6 **Case study** 10M 3 5

A retail chain observes its monthly sales for the past two years as follows
(in thousands): 120, 135, 150, 170, 190, 210, 195, 180, 200, 220, 240, 260,
140, 160, 180, 200, 220, 240, 230, 210, 250, 270, 290, 310.
(a) Use a decomposition model to estimate the trend component of the sales data.
(b) Identify any seasonal patterns, and estimate the seasonality component.
(c) Forecast the sales for the next three months, considering both trend and seasonality.

END

SET-2

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP429

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS ANALYTICS AND DATA MINING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain the evolution of Business Analytics (BA) and its scope in modern business. Discuss how data plays a central role in driving BA processes and decision-making in organizations.	10M	1	2
	OR			
Q.1(B)	What is 'What-If Analysis' in Business Analytics? Compare and contrast data tables, Scenario Manager, and Goal Seek as tools for analyzing uncertainty. Provide an example of how a business might use these tools for decision-making.	10M	1	4
Q.2(A)	What is the difference between descriptive and inferential statistics? Provide an example of how each can be applied in business decision-making, such as analyzing sales data or predicting future demand.	10M	2	2
	OR			
Q.2(B)	Explain the importance of graphical representation of data in business analytics. Discuss how charts and graphs can be used to identify patterns, trends, or anomalies in data. Provide an example of a situation where graphical representation has improved decision-making.	10M	2	2
Q.3(A)	A retailer tracks its monthly sales data, which are as follows: 200, 220, 250, 240, 260, and 270 (in units). Using exponential smoothing with a smoothing constant (α) of 0.3 and an initial forecast of 200 units, calculate the forecast for the 7th month.	10M	3	3
	OR			
Q.3(B)	A company's monthly sales data for the past six months are as follows: 150, 170, 160, 180, 190, and 200 (in units). (a) Calculate the 3-month moving average forecast for the 7th month. (b) Explain how the moving average method smooths fluctuations in the data.	10M	3	3
Q.4(A)	Cluster the 8 Employees into 3 clusters (one iteration) based on below Table:	10M	4	4

Employe ID	E1	E2	E3	E4	E5	E6	E7	E8
Monthly Targets Achieved (in dozens)	2	2	8	5	7	6	1	4
Hours Worked (in hundreds)	10	5	4	8	5	4	2	9

Initial Cluster Centers:
C1: Represents employees achieving high targets & high effort (3, 10).
C2: Represents employees with moderate targets and effort (7, 9)
C3: Represents employees with low targets and effort (2, 3).
Use Manhattan distance as distance formula.

OR

Q.4(B)	A retail company has a dataset with 50 variables, including customer demographics, purchase behavior, and transaction history. Explain how data exploration and reduction techniques can be applied to prepare the data for clustering and classification. Discuss the role of dimensionality reduction methods like PCA in this process.	10M	4	4
Q.5(A)	Explain the process of building a decision tree for business decision-making. Discuss how decision trees can help in identifying and managin risks. How can sensitivity analysis and Bayes' Rule enhance the reliabilit of decision tree-based predictions?	10M	5	5
	OR			
Q.5(B)	(i) What are the methods and techniques available for performing Sensitivity analysis? Explain	5M	5	5
	(ii) Provide a straightforward, step-by-step method for creating a decision tree.	5M		
Q.6	**CASE STUDY**	10M	5	5

You are a data analyst working for a car dealership that wants to analyze the relationship between the age of used cars and their resale value. Management believes there is a linear relationship between these two variables and has tasked you with:

1. Building a simple linear regression model to predict the resale value of a car based on its age.
2. Analyzing the strength of the relationship between these variables.

'Age': [2, 4, 5, 1, 3, 8, 7, 6, 9] # Age of used cars in years
'Resale_Value': [22000, 18000, 15000, 20000, 13000, 10000, 12000, 9000, 8000] # Resale values in dollars

Tasks:

i. Create the Regression Model in Excel: - Use the Age as the independent variable and Resale Value as the dependent variable.
ii. Evaluate the Model: -Plot a scatter plot with a trendline to visualize the relationship.
iii. Provide Insights: - Explain the regression equation and interpret the slope.

END

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP402

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

FINANCIAL DERIVATIVES

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain the growth of financial derivatives in India since their introduction.	10M	1	2
	OR			
Q.1(B)	Define the term derivatives. Elaborate upon the different types of traders in the derivatives market.	10M	1	2
Q.2(A)	Mr. Kalyan enters a futures contract on given stock in the table. You are required to determine the price of futures contract. Assume that the dividend is expected two months from now.	10M	2	3

Name of the stock	Stock price	Risk free rate of return	Duration of the contract	Expected Dividend
Green Star	350	8%	4- months	Rs.25
Blue Star	480	6 %	4- months	Rs.30
Red Star	370	7%	4- months	Rs.45

	OR			
Q.2(B)	Discuss the role of stock index futures and currency futures in financial markets.	10M	2	3
Q.3(A)	Distinguish between (i) Call options and Put Options in detail. And (ii) European and American Options in detail	10M	3	3
	OR			
Q.3(B)	A Stock price is currently at 20 dollars and will be more either up to 22 dollars or down to 18 dollars at the end of 3 months. This option considered is a European call option with a strike price of 21 dollars and an expiration date of 3 months. The risk-free interest rate is 12% per annum. Calculate the value of call option under Binomial model.	10M	3	5
Q.4(A)	Discuss Financial SWAP? Elaborate upon the features of swap and types of swap contracts.	10M	4	3
	OR			
Q.4(B)	BSNL Company and BHEL Company both are entered into SWAP Derivatives for Exchange of cash flows on Rs.20 Lakhs loan. BSNL company wish to take loans from BHEL Company at a fixed rate of interest i.e 10% and BHEL Company also wish to take the loan from BSNL company at a floating rate of interest plus 80 bps (basis points). The following rate of interest last four years' period is as given below. On March 15th 2020 4.20%	10M	4	5

On September 15th, 2020, 8.80%
On March 15th 2021 9.30%
On September 15th, 2021, 9.50%
On March 15th 2022 10.60%
On September 15th, 2022, 9.90%
On March 15th 2023 10.20%
On September 15th, 2023, 1010%

The calculation of Floating rate is at the beginning of semiannual period.

1. Show the Swap agreement between the two companies.
2. Calculate net income or cash flows receivable or payable statements in the both the companies.

Q.5(A)	Define Credit Derivatives and explain its features and types.	10M	5	3
	OR			
Q.5(B)	Define credit spreads and explain their significance in credit risk modeling.	10M	5	3
Q.6	**CASE STUDY**	10M	3	5

The following data is extracted from an investment company:

Particulars	Stock- X	Stock -Y
Stock Price	Rs. 100	Rs. 100
Exercise Price	Rs.90	Rs. 80
Time to expiration	3 months	3 months
Risk free rate of interest	12%	12%
Standard deviation	0.60	0.60

Calculate the value of call option for both stocks under the Black Scholes model.

END

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP409

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

INDUSTRIAL RELATIONS AND LABOUR CODES

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain the rules regarding hours of work and annual leave with wages under the labor codes. Why are these provisions important for employees?	10M	1	2
	OR			
Q.1(B)	Describe the duties of employers and employees in ensuring occupational safety and health	10M	1	3
Q.2(A)	Discuss the provisions of gratuity and maternity benefits under social security codes.	10M	2	3
	OR			
Q.2(B)	Explain the key provisions of Provident fund under social security codes.	10M	2	2
Q.3(A)	Explain the concept of minimum wages under code on wages	10M	3	2
	OR			
Q.3(B)	Describe the eligibility criteria and calculation methods for payment of bonuses. How does this motivate employees?	10M	3	3
Q.4(A)	Describe the key components of Industrial Relations and discuss how each component contributes to organizational stability	10M	4	3
	OR			
Q.4(B)	Compare and contrast the major approaches to Industrial Relations	10M	4	4
Q.5(A)	Describe the key mechanisms for resolving industrial disputes in India.	10M	5	3
	OR			
Q.5(B)	Discuss the concept of unfair labor practices as defined in Indian laws.	10M	5	3
Q.6	For Bata, labor had always posed major problems. Strikes seemed to be a perennial problem. Much before the assault case, Bata's chronically restive factory at Batanagar had always plagued by labor strife. In 1992, the factory was closed for four and a half months. In 1995, Bata entered into a 3-year bipartite agreement with the workers, represented by the then 10,000 strong BMU, which also had the West Bengal government as a signatory. On July 21, 1998, Weston was severely ssaulted by four workers at the company's factory at Batanagar, while he was attending a business meet. The incident occurred after a member of BMU, Arup Dutta, met Weston to discuss the issue of the suspended employees. Dutta reportedly got into a verbal duel with Weston, upon which the other workers began to shout slogans. When Weston tried to	10M	4	5

leave the room the workers turned violent and assaulted him. This was the second attack on an officer after Weston took charge of the company, the first one being the assault on the chief welfare officer in 1996.

In February 1999, a lockout was declared in Bata's Faridabad Unit. Middleton commented that the closure of the unit would not have much impact on the company's revenues as it was catering to lower-end products such as canvas and

Hawaii chappals. The lock out lasted for eight months. In October 1999, the unit resumed production when Bata signed a three-year wage agreement.

On March 8, 2000, a lockout was declared at Bata's Peenya factory in Bangalore, following a strike by its employee union. The new leadership of the union had refused to abide by the wage agreement, which was to expire in August

2001. Following the failure of its negotiations with the union, the management decided to go for a lock out. Bata management was of the view that though it would have to bear the cost of maintaining an idle plant (Rs. 3 million), the effect of the closures on sales and production would be minimal as the footwear manufactured in the factory could be shifted to the company's other factories and associate manufacturers. The factory had 300 workers on its rolls and manufactured canvas and PVC footwear In July 2000, Bata lifted the lockout at the Peenya factory. However, some of the workers opposed the company's move to get an undertaking from the factory employees to resume work. The employees demanded revocation of suspension against 20 of their fellow employees. They also demanded that conditions such as maintaining normal production schedule, conforming to standing orders and the settlement in force should not be insisted upon. In September 2000, Bata was again headed for a labour dispute when the BMU asked the West Bengal government to intervene in what it perceived to be a downsizing exercise being undertaken by the management. BMU justified this move by alleging that the management has increased outsourcing of products and also due to perceived declining importance of the Batanagar unit. The union said that Bata has started outsourcing the Power range of fully manufactured shoes from China, compared to the earlier outsourcing of only assembly and sewing line job. The company's production of Hawai chappals at the Batanagar unit too had come down by 58% from the weekly capacity of 0.144 million pairs. These steps had resulted in lower income for the workers forcing them to approach the government for saving their interests

Questions:

1. Maintaining good industrial relations have always been a problem for Bata. Why? How do you think Bata can maintain sound industrial relation practices?
2. The role played by the Bata Mazdoor Union (BMU) seems to have been more of a destructive one than constructive one in the state of affairs at Bata. Comment.

END

SET-1

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP430

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

DATA VISUALIZATION FOR MANAGERS

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Describe the Data Analytics in Tableau	10M	1	2
	OR			
Q.1(B)	Analyze the concept of mapping data into aesthetics. What are the common aesthetic attributes used in data visualization?	10M	1	4
Q.2(A)	Compare and contrast Tableau and Power BI in terms of their features and capabilities.	10M	2	3
	OR			
Q.2(B)	Critically examine the use histograms and density plots to visualize the distribution of a variable.	10M	2	3
Q.3(A)	Analyze the need and use of interactive visualizations to enhance data exploration and analysis?	10M	3	4
	OR			
Q.3(B)	Compare and contrast the use of bar charts, pie charts, and stacked charts for visualizing proportions.	10M	3	3
Q.4(A)	Describe alternative visualization techniques that can be used instead of line drawings.	10M	4	2
	OR			
Q.4(B)	Explain the principle of proportional link.	10M	4	2
Q.5(A)	Discuss the different charts and graphs that support the narrative and make the data easy to understand.	10M	5	4
	OR			
Q.5(B)	List and explain the different image formats such as JPEG, PNG, GIF, and SVG and their common use cases.	10M	5	2
Q.6	**CASE STUDY** Crime rates have risen and fallen throughout the history of the UnitedStates. Crime waves, or peaks in the crime rate, have been linked to specific periods in history. During the Prohibition era in the 1920s and early 1930s, crime surged. Toward the end of this era, the UCR began collecting and reporting data. The UCR is an acronym for the Uniform Crime Reports. After WWII, crime rates in the United States increased, reaching a peak in the 1970s and early 1990s. The rate of violent crime nearly doubled between 1960 and 1991. Property crime more than doubled within the same period. Crime in the United States has been steadily dropping during the 1990s and had declined drastically by the late 1990s and early 2000s, contrary to	10M	4	4

common assumptions.

The dataset consists of some important variables like Crime type, Perpetrator sex, Victim sex, Perpetrator race, Victim race, Crime incidents, year of crime occurrence, Agency name, Agency type, Perpetrator ethnicity, relationship, the weapon used, perpetrator count, victim count, among others. These variables will be used in generating insights into the distribution of crime rates in the United States and will also help in making necessary recommendations and conclusions. Use the MS Power BI tool to import the dataset, transform the dataset in the Power Query Editor, design the data model, create some measures, and build the report.

Questions:

(a)Which years saw the most significant increase or decrease in crime rates?

(b) Are there any noticeable patterns in crime rates across different time zones?

(c) In which year were the highest number of crimes reported?

END

SET-2

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP430

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

DATA VISUALIZATION FOR MANAGERS

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Illustrate what is data visualization, and how does it aid in data analysis and communication?	10M	1	4
	OR			
Q.1(B)	Analyze the process of mapping data onto different visual aesthetics to create effective visualizations.	10M	1	4
Q.2(A)	Discuss ethical considerations and challenges associated with data visualization	10M	2	2
	OR			
Q.2(B)	Analyze the application of histograms and density plots to visualize the distribution of a variable.	10M	2	4
Q.3(A)	Compare and contrast the use of box plots and histograms for visualizing the distribution of a dataset.	10M	3	3
	OR			
Q.3(B)	What is a ridgeline plot, and how is it used to visualize the distribution of multiple datasets? Explain	10M	3	2
Q.4(A)	Discuss the common pitfalls of color use in data visualization.	10M	4	2
	OR			
Q.4(B)	Explain how you balanced the data and the context in your visualizations to ensure that they effectively communicated the insights and predictions.	10M	4	2
Q.5(A)	Discuss the importance of storytelling in data visualization.	10M	5	2
	OR			
Q.5(B)	Analyze the difference among JPEG and PNG image format.	10M	5	2
Q.6	**CASE STUDY** Helping HR in recruitment process. Our client used to follow a manual paper-work based recruitment process. He had to manage a lot of data in excel sheets. The process was tedious and error prone. On the top of that, they could not afford to spend time in manually analysing the valuable information they captured. As they assigned us the task move towards shifting to new technologies and automating the data capturing and analysing process, they also wanted us to develop useful reports which would help them predict future trends. To keep the automation process in line with other tools used by the client, we suggested them to go with Power BI for reporting purpose. We developed a number of reports for them. The visuals used were eye catching.	10M	4	4

The reports were easy enough to understand and even a lay man could grasp useful information by just a glance at a report. The reports contained useful indicators like
total recruitment over time and average CTC offered to & is expected by the candidates. All the reports contained default filters like period (Apr 2016 – Mar 2017). We also provided a separate report that allowed to compare candidates based on the aspects like salary, qualification and experience. Drill down reports were included whenever required. The client could now easily get to know top 10 sources of recruitment and top 10 reasons that made the candidates leave their previous company. The same data helped them to modify their existing policies and reduce employee attrition rate. They could now forecast a lower limit of written test score for selecting candidates. Number of reports included trends built up from the information. Trends like the salary expectations a certain experience level with a specific technical expertise helped then a lot in deciding the annual salary hike of their existing employees. Now they also have numbers of candidates who were expert in a specific technology. And the list of benefits goes on.

Questions:

(i) Information of the candidates that are applying/appearing/not appearing/selected/joined for the interview.
(ii) Information about the sources that has helped the candidates to apply for interview
(iii) Which are the top 10 sources that candidates have found the organization?

*****END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP403

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

CORPORATE TAX PLANNING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss about the Residential Status of a company?	10M	1	2
	OR			
Q.1(B)	Explain about Incomes exempt from Tax applicable to Corporate Assessee.?	10M	1	2
Q.2(A)	Explain the Various Sources of Income to Corporate Assessee?	10M	2	2
	OR			
Q.2(B)	Mahesh company Ltd sold a house property on 25th February 2024 for Rs 55, 00,000. It was bought 22nd April 2018 with Rs.12, 50,000. Constructed first floor in the Year 2019 January with Rs.7,00,000. In September 2020, the company spent Rs.2, 00,000 for the improvement of an asset, company paid a 1% commission on the selling price. You are required to compute the income from capital assets for the previous year 2023-24.	10M	2	5
Q.3(A)	Describe the Deduction in respect of donations for scientific research and rural development [Section 80GGA].	10M	3	2
	OR			
Q.3(B)	The following information is related to the Sunlight group of companies: I. Non-Speculative businesses: a) Profit from steel company Rs.15 70000. b) profit from cement company Rs.125000. c) profit from transport company Rs.670000. d) Loss from tobacco company Rs.750000. e) Loss from airlines Co limited Rs.168000. II. Speculative businesses: a) Profit from business-A Rs.790000. b) Profit from business -B Rs.560000. c) Loss from Business-C Rs.159000. III. Capital gains: a) Long term capital gains on residential building Rs.1270000 b) Long term capital gain on BBC equity stock Rs.890000 c) Long term capital loss on XYZ equity stock Rs.2470000 d) Short term capital gain on gold Rs.1570000 e) Short term capital gains an equity stock Rs.140000. You are required to compute the Gross Income of Blue star Co. for the Assessment year 2024-25 and taken Into Consideration the Following • Brought down Steel Business loss from Assessment year 2020-21 Rs.75,000 • Brought down Long-term capital Loss from Assessment year 2020-21 Rs.15, 000.	10M	3	5
Q.4(A)	Examine about the Methods of Tax avoidance.	10M	4	2
	OR			

Q.4(B)	Illustrate the significance Corporate Tax Planning Strategies in respect of Capital Structure?	10M	4	2
Q.5(A)	Examine the Corporate Tax Planning in respect of Export Promotion.	10M	5	2
	OR			
Q.5(B)	Elaborate the Corporate Tax planning in respect of foreign collaborations.	10M	5	2
Q.6	**CASE STUDY**	10M	3	5

The profit and loss account belongs to Balaji Company Ltd at the end of 31st March 2024.

Particulars	Amount	Particulars	Amount
To Salaries	1,20,000	By Gross profit	10,65,000
To Printing & stationery	40,000	By Gift from friends	12,700
To Advertisement	1,20,000	By Dividend on Investment	40,000
To Repairs	60,000		
To Fire insurance premium	30,000		
To Life insurance premium	60,000		
To Provision for bad debts	5,000		
To Provision for income tax	4,000		
To Travelling charges	30,000		
To Depreciation on plant and machinery	60,000		
To Depreciation on land and buildings	50,000		
To Electricity bill	70,000		
To Mobile charges	30,000		
To Internet services	50,000		
To Net Profit	3,88,700		
	1117700		1117700

Additional information

1. In the repair expenditure 80% for office Buildings.
2. Depreciation on plant and machinery allowed on 40,000
3. Depreciation on furniture disallowed by income tax authority

Rs. 25,000.

4. In the electricity bill Rs. 15,000 related to Company CEO guest house.

You are required to compute the Income from Business for the previous year 2023-24

*****END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP410

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February – 2025

HUMAN RESOURCE PLANNING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss in detail various approaches to HRP and justify which approach is best from your point of view?	10M	1	2
	OR			
Q.1(B)	Explain the qualitative dimension of HRP?	10M	1	2
Q.2(A)	Compare quantitative and qualitative analysis of forecasting with a suitable example?	10M	2	2
	OR			
Q.2(B)	Explain analysis of work load factor method with an example?	10M	2	2
Q.3(A)	Analyze the need of forecasting HR supply in the organization and explain the source of Human resource supply?	10M	3	4
	OR			
Q.3(B)	Explain Markov Analysis with suitable example?	10M	3	2
Q.4(A)	VRS is effective method of managing HR surplus, Justify?	10M	4	5
	OR			
Q.4(B)	Do you think employer branding leads to the acquisition of best talent in the organization, justify?	10M	4	3
Q.5(A)	Analyze the difference among HR Auditing and HR accounting?	10M	5	4
	OR			
Q.5(B)	Discuss the objectives of human resource audit in details?	10M	5	2
Q.6	**CASE STUDY** Vishal Industries Ltd., is a medium sized engineering factory employing 250 employees. The Factory Manager advised the Personnel Manager of the company to select a right man to fill up the vacancy of a "Time-Keeper". The Personnel Manager inserted an advertisement for this post in prominent local newspapers and received a large number of applications although specific job description and job requirements were embodied in the advertisement. After preliminary screening of applications, the Personnel Manage selected only 6 applications out of 197 and sent them" Application Blank" for collecting their detailed information. On receipt of Applications and on further scrutiny, it was observed that two candidates were age-barred, although they had a good experience at their credit and one candidate had a suspicious personal life. The Personnel Manager therefore selected only 3 candidates and sent them call-letters for a personal interview on a stipulated date. Only two candidates out of three appeared for the interview before the Interview Panel consisting of three interviewers. The panel had therefore to take a decision on selection, either of Mr. Tukaram Patil or Mr. Girish Mahajan. The personal traits and merits of these two candidates are as follows:	10M	2	4

Mr. Tukaram Patil, a young man of 30 years, has worked for a year in the Time Office of a reputed company. He is an exceptionally sociable, amicable individual who enjoys mixing with employees. His verbal skills are average, but he has a good degree of hardness. He can sit late in office and prepare payrolls of employees and complete the checking of paysheets a day before the actual date of payment. He does not demand extra remuneration or over-time for sitting late hours in office. He is a good sportsman also and has worked as a secretary of a sports club. A glaring weakness as revealed during the interview is that Mr. Patil's memory is not strong and he may forget a task assigned to him. But he is straight-forward and frankly accepts his limitations.

Mr. Girish Mahajan, is also a youth, aged 25, and has a good personality, above average communication skills, but at times is "rough" in dealing with people. His clerical and computational skills are excellent. He does not on his own mix with people or take part in extracurricular activities. He joined a textile mill as a clerk in the Time Office and was promoted to the post of Assistant Time Keeper within a period of 5 years. He is against the principle of sitting late in office. His sense of time keeping, punctuality is good and regular. He feels that attendance of employees must be posted in the regular register on the same day and paysheets must be kept ready on I." of every month and sent to AI c Department, for checking before 3rd inst. Similarly, he prepares PFI, ESI statements and returns in time and submits the same to respective Government authorities in time. However, Mr. Girish Mahajan is short tempered and at times he also had heated arguments with managerial executives. He limits his existence to his working table and if anybody unconnected with the time-office work comes near his table, he loses his temper.

Questions:

(a) In terms or overall capabilities and job requirements, whom will you recommend out of the two candidates, in your capacity as a personnel Manager?

(b) What are the criteria of your decision?

(c) In case the other two members of the Interview Panel differ from your decision, how will you convince them?

*****END*****

SET-1

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP431

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS FORECASTING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain forecasting significance in business decision-making with suitable examples. Identify the factors that influence the selection of an appropriate forecasting model.	10M	1	2
	OR			
Q.1(B)	Discuss different types of data used in forecasting and their sources. Provide examples for each type.	10M	1	2
Q.2(A)	Examine the role of linear regression and correlation in forecasting. How do these techniques help in predicting future trends?	10M	2	4
	OR			
Q.2(B)	The dataset simulates a scenario where income affects expenditure, and the variance of expenditure increases with income. a) Using the dataset **Q2B** provided, plot a scatter plot of residuals vs. income. What pattern do you observe? b) Perform the heteroscedasticity test on dataset **Q2B**. What does the result indicate?	10M	2	4
Q.3(A)	Differentiate between linear and nonlinear trends in time series data. Provide examples of when each type is used in forecasting.	10M	3	2
	OR			
Q.3(B)	Apply Box-Jenkins model for the given data set Q 3B and forecast the visitors count for the year 2025 to 2030	10M	3	5
Q.4(A)	Discuss the theory of forecast combination. Assess what are the key mathematical methods used to combine multiple forecasts.	10M	4	3
	OR			
Q.4(B)	Identify the major methods of long-term forecasting. Evaluate how they help businesses and policymakers.	10M	4	3
Q.5(A)	Evaluate VAR model to the given dataset **Q 5A**	10M	5	5
	OR			
Q.5(B)	Compare structural and vector auto regression models in forecasting. Discuss their key differences, advantages, and limitations.	10M	5	3
Q.6	**CASE STUDY** The dataset includes GDP growth rate, Unemployment rate, inflation rate, foreign direct investment (FDI), and literacy rate from 2010 to 2023. Use data in Q6. (Use either E-Views or Excel) Answer the following questions a) Assess what are the key economic factors influencing India's GDP growth through regression analysis. b) Does an increase in FDI lead to higher employment rates?	10M	2	5

END

SET-2

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP431

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS FORECASTING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Describe different types of forecasting models. Explain their applications.	10M	1	2
	OR			
Q.1(B)	Describe the challenges of forecasting under uncertainty. Discuss the techniques to handle uncertainty in predictions.	10M	1	2
Q.2(A)	Examine heteroscedasticity impact on regression analysis. How can it be detected using statistical tests?	10M	2	3
	OR			
Q.2(B)	The sample dataset for multiple regression analysis. This dataset includes sales revenue as the dependent variable and three independent variables: advertising budget, price, and customer satisfaction score. Analyze multiple regression between for the given data set Q2B.	10M	2	5
Q.3(A)	What are the various data smoothing techniques? Analyze their applications in forecasting.	10M	3	4
	OR			
Q.3(B)	This dataset Q3B represents monthly demand for a product. Determine the appropriate ARMA (p, q) model for this dataset using ACF and PACF analysis.	10M	3	4
Q.4(A)	Differentiate between endogenous and exogenous variables in sales forecasting. Provide examples of each.	10M	4	2
	OR			
Q.4(B)	Explain different methods for determining nonlinear trends with relevant examples.	10M	4	2
Q.5(A)	How can consumer and business sentiment indexes be used in forecasting? Provide examples of how these indexes influence business making.	10M	5	3
	OR			
Q.5(B)	The VAR model is used when multiple time series variables influence each other. The available dataset Q5B with two economic indicators (GDP growth and Inflation rate) observed over 24 months. Use the fitted VAR(1) model to forecast GDP growth and inflation for the next 3 months.	10M	5	5
Q.6	**CASE STUDY** The dataset includes year and inflation rate from 2010 to 2024. Use E-Views for Q6 (i) Assess how the Box-Jenkins approach can provide an accurate inflation forecast for India. (ii) How does inflation behave over different economic cycles in India?	10M	3	5

END

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MBAP419

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q. No	Question	Marks	CO	BL
Q.1(A)	Analyze the key drivers of supply chain performance and illustrate their role with suitable examples.	10M	1	4
	OR			
Q.1(B)	Evaluate the primary objectives of supply chain management and discuss their significance in ensuring organizational success.	10M	1	4
Q.2(A)	Analyze the application of distribution networks in real-world scenarios, highlighting challenges and best practices.	10M	2	4
	OR			
Q.2(B)	What is the impact of uncertainty on network design? Explain the factors affecting network design?	10M	2	2
Q.3(A)	Discuss various methods in the time series of supply chain forecasting.	10M	3	2
	OR			
Q.3(B)	Explain the importance of forecasting in supply chain management and illustrate its role in decision-making and strategic planning."	10M	3	2
Q.4(A)	Estimate the key factors affecting the level of safety inventory in a supply chain and their impact on risk mitigation and service levels.	10M	4	4
	OR			
Q.4(B)	What is the role of the information system in the supply chain? Which IT technology is used in SCM?	10M	4	2
Q.5(A)	Compare and contrast the advantages and disadvantages of different modes of transportation in supply chain management.	10M	5	3
	OR			
Q.5(B)	Elaborate the functions of sourcing in supply chain management.	10M	5	2
Q.6	**CASE STUDY** Kurlon Limited is the largest manufacturer of mattresses in India, with sales of Rs 110 crore. Kurlon roughly has a 65% market share of the branded rubberized coir mattress market. It had witnessed rapid growth in sales and market share in the mid-nineties, but from 1996 onwards sales and market share had stagnated and profitability was on the decline. In 1998, Kurlon was worried about the increased competition from other branded and un-branded mattresses, and the challenges of providing a higher variety to	10M	1	5

customers. In the wake of the already high number— 126 configurations of mattresses and another 75 configurations that would come after Kurlon enters into a joint venture with DuPont— the managing director of the firm is concerned that the current system of operations and supply chain are inefficient to handle the load in an increasingly competitive market. He is also worried about the huge inventory lead times when compared to the far more efficient European firms, coupled with the complexity of managing an increasingly large product variety due to the unorganized nature of the furniture business in the country.

Questions

1. Evaluate the performance of the Kurlon supply chain. What are the causes of the problems faced at Kurlon?
2. What specific actions do you recommend to Narendra Kudva to address the supply chain performance problems?

SET-1

Hall Ticket No: | | | | | | | | | | | **Question Paper Code: 22MBAP433**

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS DECISIONS USING DATA

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Data preprocessing is a crucial step in the knowledge discovery process. Explain the importance of data preprocessing in data mining and discuss its key techniques, including handling missing values, data normalization, and outlier detection. Use examples to illustrate your points.	10M	1	2
	OR			
Q.1(B)	Discuss the role of similarity and dissimilarity measures in analyzing patterns in data. How do these measures influence clustering and classification tasks? Illustrate your answer with examples of similarity/dissimilarity measures and their applications in business scenarios.	10M	1	4
Q.2(A)	Explain the concept of supervised classification and the role of probability in decision-making under uncertainty. How can the theory of probability enhance the effectiveness of a decision tree classifier? Use business-related examples to support your explanation.	10M	2	5
	OR			
Q.2(B)	Discuss the process of constructing a decision tree classifier and extracting classification rules from it. How can decision trees be applied to solve complex business decisions, such as customer segmentation or credit risk analysis? Provide a detailed example to illustrate your answer.	10M	2	4
Q.3(A)	Describe the general approach to solving a classification problem, from data preparation to model evaluation. Discuss the metrics used to evaluate the performance of a classifier, such as accuracy, precision, recall, F1-score, and ROC-AUC. Use a business scenario, such as fraud detection in credit card transactions, to illustrate your answer.	10M	3	4
	OR			
Q.3(B)	Compare and contrast rule-based classification, nearest-neighbor classification, and Bayes classification methods. Highlight their strengths and limitations and explain how they can be applied to solve real-world business problems, such as customer segmentation or anomaly detection in financial transactions.	10M	3	5
Q.4(A)	Compare and contrast partitional clustering methods (e.g., k-means and DBSCAN) with hierarchical clustering methods (e.g., Ward's method). Discuss their advantages and limitations, and illustrate their application to a real-world business scenario, such as customer segmentation.	10M	4	5
	OR			

Q.4(B)	Explain the concept of Multidimensional Scaling (MDS) and describe how it can be used to visualize the similarity or dissimilarity between products in a market. Provide a simple example to illustrate its application.	10M	4	3
Q.5(A)	A company wants to predict its monthly sales (dependent variable) based on advertising expenditures in TV, radio, and newspaper (independent variables). Formulate the regression equation and explain how the coefficients of TV, radio, and newspaper advertising would be interpreted.	10M	5	3
	OR			
Q.5(B)	A retail store is analyzing the factors that influence customer spending. Data on customer income, age, and loyalty program participation are available. Evaluate a multivariate linear regression model to predict customer spending.	10M	5	5
Q.6	**CASE STUDY** A retail company has collected data on customer purchases, including demographic information, purchase frequency, and spending patterns. The goal is to segment customers into distinct groups for targeted marketing campaigns. (a) Explain how you would apply a clustering technique (e.g., k-means or DBSCAN) to achieve this segmentation. (b) Once the clusters are formed, suggest how the results can be interpreted and used to design marketing strategies for each group. (c) If the dataset has 50 variables, explain how you could use dimensionality reduction (e.g., PCA) to simplify the analysis while retaining essential information.	10M	4	4

END

SET-2

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP433

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BUSINESS DECISIONS USING DATA

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Compare and contrast linear and nonlinear models in data fitting. Discuss how the choice of model impacts data visualization and decision-making in business scenarios. Provide examples where linear models are more effective and where nonlinear models might yield better results.	10M	1	5
	OR			
Q.1(B)	Explain the process of knowledge discovery in data mining. Discuss the importance of data preprocessing and how it affects the quality of insights derived. Using an example, illustrate how similarity and dissimilarity measures can be applied in a business context, such as customer segmentation or fraud detection.	10M	1	4
Q.2(A)	Review the theory of probability and explain the concept of information. Discuss how probability theory underpins supervised classification methods, including decision tree classifiers. Provide an example to illustrate how decision trees leverage probability in business decision-making, such as fraud detection or customer retention.	10M	2	2
	OR			
Q.2(B)	Explain the steps involved in constructing a decision tree classifier and extracting classification rules from it. How can these rules be applied in real-world business scenarios, such as customer segmentation or inventory management? Provide a detailed example to support your explanation.	10M	2	3
Q.3(A)	What are the key steps in solving a classification problem? Briefly explain how you evaluate the performance of a classifier using metrics like accuracy and precision.	10M	3	2
	OR			
Q.3(B)	Explain the difference between rule-based classification and nearest-neighbor classification. Give one example of how each can be used in business applications.	10M	3	2
Q.4(A)	What is the difference between partitional clustering (e.g., k-means) and hierarchical clustering (e.g., Ward's method)? Give one example of how each can be applied in business.	10M	4	2
	OR			
Q.4(B)	What is the Expectation-Maximization (EM) algorithm, and how is it used in clustering? Briefly explain its steps and provide one example of its application.	10M	4	2

Q.5(A)	A company wants to predict sales based on advertising expenditures in TV, radio, and newspaper. Explain how multiple linear regression can be used to build the prediction model. Discuss the assumptions of regression and how statistical inference (e.g., hypothesis testing for coefficients) helps evaluate the significance of each advertising channel. Propose how the results can guide the company's advertising strategy.	10M	5	4
	OR			
Q.5(B)	What is the difference between simple linear regression and multiple linear regression? Provide an example of when you would use each.	10M	5	2
Q.6	**CASE STUDY** A multinational e-commerce platform is analyzing its transaction data to identify fraudulent activities while also segmenting customers to personalize marketing strategies. The dataset includes over 1 million records with 100 features, including transaction amounts, timestamps, customer demographics, purchase history, and device usage. (a) Devise a complete workflow, starting from data preparation to model evaluation, to solve the dual problems of fraud detection and customer segmentation. (b) Critically analyze the use of rule-based classification, nearest-neighbor classification, and Bayes classifiers for fraud detection. Discuss how clustering techniques (e.g., k-means and DBSCAN) and dimensionality reduction (e.g., PCA or factor analysis) can be integrated to handle high-dimensional data and improve the classification model. (c) Propose how the results of this analysis can be used to optimize the platform's fraud prevention system and enhance customer targeting strategies.	10M	3	5

END

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MBAP420

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular & Supplementary End Semester Examinations, February - 2025

BRAND MANAGEMENT

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss the significance and objectives of branding. How does branding contribute to the long-term success of a company?	10M	1	2
	OR			
Q.1(B)	Suppose you are hired to rejuvenate a failing brand. What steps would you take to develop and implement a new brand identity?	10M	1	3
Q.2(A)	Explain the concept of brand knowledge, brand awareness, and brand image. How are these three factors related to a brand's success?	10M	2	2
	OR			
Q.2(B)	What do you understand by Brand Equity? Discuss its significance in today's highly competitive environment.	10M	2	2
Q.3(A)	How do STP (Segmentation, Targeting, Positioning) strategies contribute to successful brand positioning?	10M	3	2
	OR			
Q.3(B)	Explain the concept of brand equity. Discuss the customer-based brand equity.	10M	3	3
Q.4(A)	Evaluate the benefits and drawbacks of brand extensions. Under what circumstances should a company consider brand extension?	10M	4	4
	OR			
Q.4(B)	You are responsible for launching a new product through e-branding. How would you design an e-branding strategy for this product?	10M	4	3
Q.5(A)	Explain the role of celebrity endorsements in enhancing brand image and performance. What factors make celebrity endorsements successful?	10M	5	2
	OR			
Q.5(B)	Discuss how a specific brand uses brand personality to distinguish itself from competitors.	10M	5	3
Q.6	**CASE STUDY**	10M	3	5

"Maggi" is a brand that predominantly supplies noodles along with sauces, seasonings, and soups. It originated in Switzerland in the late 19th century. It was later acquired by Nestle in1947. In India, Maggi noodles are a product that will be found in almost every household. These instant noodles are enjoyed by everyone ranging from kids and teenagers to even adults and senior citizens. They are a must-have for every hosteller and a midnight snack for all students pulling all-nighters for exams. While Maggi noodles are enjoyed normally, some consumers like to customize them with various ingredients ranging from vegetables, corn, and different seasonings to butter, cheese, chicken, and eggs as well. Some people like to have them dry while some like the soupy version. Some people enjoy eating Maggi noodles in solitude while others enjoy them with friends and family. It becomes a companion in all gatherings. Maggi has positioned itself in the minds of consumers as an instant snack that only requires 2 minutes to be prepared. It can be

enjoyed when one is happy and is a mood-uplifter when one is sad.

Maggi has launched its variety including Chicken Maggi, Maggi Pasta, Maggi Masters of India, Maggi Hot Heads for spice lovers, and many more. Maggi uses a Value-Based strategy to advertise its product. It portrays how Maggi brings people together from friends to family. It also shows that Maggi is a constant in everyone's life and while life moves on, the taste and the vibe of Maggi remains the same. Maggi Controversy, In May 2015, food safety regulators from Barabanki a district of Uttar Pradesh, India reported that samples of Maggi 2 Minute Noodles had unexpectedly high levels of Monosodium. Glutamate (MSG), as well as up to 17 times the permissible limit of lead. This finding led to multiple market withdrawals and investigations in India and beyond. During the controversy, consumers switched to different brands like Yippee noodles, Top Ramen, etc. After the controversy was over, Maggi noodles came back into the market and found their position yet again. Its consumers were unhappy about the same but the consumption began again in no time post its come-back.

1. How Maggi positioned itself in the market and who are the target customers.
2. Explain the various repositioning strategy Maggi management needed to be taken after 2015.

*****END*****

SET-1

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP434

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular End Semester Examinations, February - 2025

PREDICTIVE ANALYSIS AND MODELING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	How would you explain the presentations and structure in academic writing?	10M	1	2
	OR			
Q.1(B)	How can predictive analytics be used in marketing to identify potential customers and target them with personalized advertisements?	10M	1	2
Q.2(A)	What is sampling? How do you collect data from both Primary and Secondary Sources? Explain.	10M	2	2
	OR			
Q.2(B)	Explain the difference between simple random sampling, systematic sampling, and stratified random sampling. When might each be most appropriate?	10M	2	3
Q.3(A)	Explain the core concepts of Structural Equation Modeling (SEM). How does SEM help in multivariate analysis?	10M	3	3
	OR			
Q.3(B)	Describe discriminant analysis and its application in predictive analytics. How is it different from logistical regression?	10M	3	3
Q.4(A)	Analyze the process of validating the assumptions in simple linear regression.	10M	4	3
	OR			
Q.4(B)	How Simple linear regression defines an equation analysis. Interpret the result for the given data set with the equation?	10M	4	2

Adv. Exp. (Rs. '000)	56	42	72	36	63	47	55	49	38	68
Sales (Rs. '000)	147	125	160	118	149	128	150	145	115	152

Q.5(A)	How would you apply ARIMA model? Is it a predictive model used for tim	10M	5	3
	OR			
Q.5(B)	Provide the Jan 2012 Sales from the given data using Exponential moving average method and also discuss other time series methods?	10M	5	3

Year	Sales (in Rs. Lakhs)
2002	348
2003	496
2004	523
2005	486
2006	622
2007	599
2008	604
2009	589
2010	699
2011	650

Q.6	**Case Study**	10M	3	4

Results obtained from the Multiple Regression Analysis are shown

below where Total Cost is taken as a dependent variable and variable cost and fixed cost are taken as independent variables.

Multiple Regression for Overheads					
Summary	Multiple R	R^2	Adjusted R^2	SE of Estimates	
	0.9308	0.8664	0.8583	4108.9	
ANOVA Table	Degrees of Freedom	Sum of Squares	Mean of Squares	F-Ratio	P-Value
Explained	2	3614020661	1807010330	107.0261	<0.0001
Unexplained	33	557166199.1	16883762.42		

Regression Table	Coefficient	Standard Error (S.E)	t-Value	P-Value
Constant	34997.7	6605.6	0.6052	0.5992
Variable Cost	43.5	5.2542	12.129	0.0001
Fixed Cost	883.6	301.6	10.743	0.0001

a) Interpret the output displayed in the table in detail.
b) Formulate the regression equation for Total cost with explanatory variables, variable and fixed cost. Predict the total cost if variable cost is 450 and fixed cost is 20.

END

SET-2

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MBAP434

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R22) Regular End Semester Examinations, February - 2025

PREDICTIVE ANALYSIS AND MODELING

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

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No	Question	Marks	CO	BL
Q.1(A)	Discuss the tools generally used in predictive analytics. Explain their role in supporting business decisions.	10M	1	2
	OR			
Q.1(B)	Explain the importance of Predictive Analytics (PA) in modern business contexts.	10M	1	3
Q.2(A)	What are the threats to Internal validity and External validity? ii) Calculate the sample size if total population(N)=425, Z=2, E=0.05 and p=0.5	10M	2	2
	OR			
Q.2(B)	Write about the following: (a). Validity (b). Reliability	10M	2	2
Q.3(A)	Can you list few important analyses of dependence methods and interdependence methods in detail?	10M	3	2
	OR			
Q.3(B)	What are the steps involved in conducting a structural equation modeling analysis? Discuss in detail.	10M	3	2
Q.4(A)	Construct a predictive model using multiple linear regression. Describe the steps involved, including variable selection and model validation.	10M	4	3
	OR			
Q.4(B)	Summarize the concepts in multiple linear regression? Why do you think the outliers and coefficient have its importance in regression?	10M	4	3
Q.5(A)	Run a logistic regression and build an equation to predict loan status using the data set Provided.	10M	5	2
	OR			
Q.5(B)	What are the key benefits of predictive analysis in organizations? Can you summarize the changes happened due to the rise of predictive analysis in different sectors?	10M	5	3
Q.6	**Case Study** In the 1990s, a task force was formed among executives of seven regional transportation agencies in the New York–New Jersey area. The mission of the task force was to investigate the feasibility and desirability of adopting electronic toll collection (ETC) for the interregional roadways of the area. Electronic toll collection is accomplished by providing commuters with small transceivers (tags) that emit a tuned radio signal. Receivers placed at tollbooths are able to receive the radio signal and identify the commuter associated with the particular signal. Commuters Establish ETC accounts that are debited for each use of a toll road or facility, thus eliminating the need for the commuter to pay by cash or check. Because the radio signal can be read from a car in motion, ETC can reduce traffic jams at toll plazas by allowing tollbooths to pass through at moderate speeds. At the time the	10M	1	4

New York and New Jersey agencies were studying the service, electronic toll collection systems were being used successfully in Texas and Louisiana. Even though several of the agencies had individually considered implementing ETC, they recognized that independent adoption would fall short of the potential benefits achievable with an integrated interregional system.

The task force was most interested in identifying the potential economic services for each agency's commuters and determining how similar or different these configurations might be across agencies. The task force identified a lengthy list of attributes that was ultimately culled to six questions:

- How many accounts are necessary and what statements will be received?
- How and where does one pay for E-ZPass?
- What lanes are available for use, and how are they controlled?
- Is the tag transferable to other vehicles?
- What is the price of the tag and possible service charges?
- What are other possible uses for the E-ZPass tag (e.g., parking gasoline purchases, etc.) and how extensive is the integration?

From a researcher's perspective, it also emerged from this experience that the research process is iterative. However, the task force was not interested in theoretical solutions to every possible problem necessarily committed to implementing ETC regional systems in the immediate future. Rather, the task force considered its primary the downloading each agencies' commuters' preferences for how they would want such an innovative system to be achieved.

Questions:

1. What is the problem-definition process? How has the task force defined the problem adequately so that a relevant decision problem can be selected?
2. What research design would you recommend?
3. What processes did the task force consider?

*****END*****