



**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram-521 230 :: NTR Dist. :: A.P
Approved by AICTE, New Delhi. Affiliated to JNTUK, Kakinada

MBA (II Semester) (R24) Semester End Examinations (Regular) July 2026

TIME TABLE

Time : 10.00 AM to 01.00 PM

A.Y. : 2025-26

R24

13-07-2026 (Monday)	15-07-2026 (Wednesday)	17-07-2026 (Friday)	20-07-2026 (Monday)	22-07-2026 (Wednesday)	24-07-2026 (Friday)	27-07-2026 (Monday)
24MB07 - Financial Management	24MB08 - Human Resource Management	24MB09 - Operations Management	24MB10 - Marketing Management	24MB11 - Research Methods for Business Decisions	24MB12 - Business Analytics	24OE89 - Database Management Systems

Note: Any omissions or clashes in the time table may please be informed to the Controller of Examinations immediately.

Date: 27 JUN 2026

CONTROLLER OF EXAMINATIONS

PRINCIPAL

Copy to: 1. Vice-Principal, Deans & HoD
2. T&P cell, Transport Coordinator & Librarian
3. Canteen, PD, Security & Hostels
4. Coordinator-Disciplinary
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LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

L.B.Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist. :: A.P.

MBA (II Semester) Regular Examinations

24MB07-FINANCIAL MANAGEMENT

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Describe the concept and importance of Financial Management in modern business organizations.	6M	CO1	L2
(b)	Outline the nature and scope of Financial Management.	6M	CO1	L3
(OR)				
2(a)	Differentiate between the traditional and modern approaches to Financial Management.	6M	CO1	L2
(b)	Examine the role of Financial Management in accomplishing the firm's mission and objectives.	6M	CO1	L3
3(a)	Classify the various sources of finance available to a business organization based on their duration and ownership.	6M	CO2	L3
(b)	Explain the factors that influence the design of an optimal capital structure.	6M	CO2	L2
(OR)				
4(a)	A Company produces and sells 10,000 shirts. The selling price per shirt is ₹500. Variable cost is ₹200 per shirt and fixed operating cost is ₹25,00,000 (i) Calculate Operating Leverage (ii) If sales are up by 10%, then compute the impact on EBIT.	6M	CO2	L4
(b)	Five years ago, Sona Limited issued 12% irredeemable debentures at ₹103, i.e., at a premium of ₹3 over their par value of ₹100. The current market price of these debentures is ₹94. If the company pays corporate tax at the rate of 35%, calculate the current cost of debenture capital by using cost of irredeemable debentures.	6M	CO2	L4
5(a)	Define Capital Budgeting and explain its significance in long-term investment decisions.	6M	CO3	L2
(b)	Enumerate the stages involved in the Capital Budgeting process.	6M	CO3	L3
(OR)				
6(a)	Suppose a project costs ₹20,00,000 and yields an annual profit of ₹3,00,000 after depreciation @ 12½% (Straight Line Method) but before tax. The income tax rate is 50%. The first step is to calculate the cash inflow from this project and find Payback period.	6M	CO3	L4
(b)	Times Ltd. is going to invest in a project a sum of ₹3,00,000, having a life span of 3 years. The salvage value of machine is ₹90,000. The profit before depreciation for each year is ₹1,50,000. by using ARR	6M	CO3	L4
7(a)	Explain the concept and objectives of dividend policy.	6M	CO4	L3
(b)	Differentiate between the various forms of dividends based on their features.	6M	CO4	L3
(OR)				

24MB07-FINANCIAL MANAGEMENT

8(a)	XYZ Ltd. earns ₹10 per share. The capitalization rate and return on investment are 10% and 12%, respectively. Determine the optimum dividend payout ratio and the price of the share at that payout, by using Walter’s Model	6M	CO4	L4																														
(b)	AB Engineering Ltd. belongs to a risk class for which the capitalization rate is 10%. It currently has 10,000 outstanding shares selling at ₹100 each. The firm is contemplating the declaration of a dividend of ₹5 per share at the end of the current financial year. It expects to have a net income of ₹1,00,000 and has a proposal for making new investments of ₹2,00,000. Calculate the value of the firm by using MM Hypothesis, when dividends: (i) Are not paid (ii) Are paid.	6M	CO4	L4																														
9(a)	Discuss the concept and objectives of Working Capital Management.	6M	CO4	L2																														
(b)	Compare Gross Working Capital and Net Working Capital with suitable examples.	6M	CO4	L3																														
(OR)																																		
10(a)	Characterize the different classifications of Working Capital.	6M	CO5	L2																														
(b)	Relate the Operating Cycle to the estimation of Working Capital requirements.	6M	CO5	L3																														
11.	Case Study (Compulsory Question) From the following information of XYZ Ltd., you are required to calculate: (i) Net operating cycle period. (ii) Number of operating cycles in a year. <table><tr><th>S.No</th><th>Particulars</th><th>Amount / Days</th></tr><tr><td>(i)</td><td>Raw material inventory consumed during the year</td><td>₹6,00,000</td></tr><tr><td>(ii)</td><td>Average stock of raw material</td><td>₹50,000</td></tr><tr><td>(iii)</td><td>Work-in-progress inventory</td><td>₹5,00,000</td></tr><tr><td>(iv)</td><td>Average work-in-progress inventory</td><td>₹30,000</td></tr><tr><td>(v)</td><td>Cost of goods sold during the year</td><td>₹8,00,000</td></tr><tr><td>(vi)</td><td>Average finished goods stock held</td><td>₹40,000</td></tr><tr><td>(vii)</td><td>Average collection period from debtors</td><td>45 days</td></tr><tr><td>(viii)</td><td>Average credit period availed</td><td>30 days</td></tr><tr><td>(ix)</td><td>No. of days in a year</td><td>360 days</td></tr></table>	S.No	Particulars	Amount / Days	(i)	Raw material inventory consumed during the year	₹6,00,000	(ii)	Average stock of raw material	₹50,000	(iii)	Work-in-progress inventory	₹5,00,000	(iv)	Average work-in-progress inventory	₹30,000	(v)	Cost of goods sold during the year	₹8,00,000	(vi)	Average finished goods stock held	₹40,000	(vii)	Average collection period from debtors	45 days	(viii)	Average credit period availed	30 days	(ix)	No. of days in a year	360 days	10M	CO5	L5
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MBA. (II Semester) Regular Examinations

Passes
*15/7/26***24MB08-HUMAN RESOURCE MANAGEMENT**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Discuss the nature, scope, and objectives of Human Resource Management in modern organizations.	6M	CO1	L2
(b)	Elaborate the characteristics and importance of effective HR policies with suitable examples.	6M	CO1	L2
(OR)				
2.	Enumerate the major functions of Human Resource Management. How do these functions contribute to organizational effectiveness?	12M	CO1	L3
3(a)	Explain the process and importance of HRP in achieving organizational goals.	6M	CO2	L2
(b)	Describe the objectives, process, and benefits of an effective induction programme in service organizations.	6M	CO2	L3
(OR)				
4.	Highlight the need and importance of Training and Development. Explain the various methods of employee training used by organizations.	12M	CO2	L3
5(a)	Demonstrate the need and importance of an effective appraisal system in an organization.	6M	CO3	L3
(b)	Recall how different internal and external factors affect compensation decisions.	6M	CO3	L2
(OR)				
6(a)	Describe modern methods of performance appraisal adopted in organizations.	6M	CO3	L2
(b)	Explain the various incentive and reward mechanisms used to improve employee performance.	6M	CO3	L2
7(a)	Discuss the factors to be considered while designing an effective wage structure in an organization.	6M	CO4	L2
(b)	Enumerate the causes and significance of wage differentials in organizations.	6M	CO4	L3
(OR)				
8(a)	Explain the scope, objectives, and importance of welfare management in improving employee well-being and organizational performance.	6M	CO4	L2
(b)	Differentiate between statutory and non-statutory welfare measures. Explain each with suitable examples.	6M	CO4	L3
9(a)	Describe the role and importance of industrial relations in maintaining harmonious employer-employee relationships.	6M	CO5	L2
(b)	Explain the process of collective bargaining and discuss its advantages and limitations.	6M	CO5	L2
(OR)				

24MB08-HUMAN RESOURCE MANAGEMENT

10.	Elaborate the various employee participation schemes adopted by organizations.	12M	CO5	L3
11.	Case study (Compulsory question) Wage Negotiation and Collective Bargaining at ABC Manufacturing Ltd. ABC Manufacturing Ltd., an automobile components manufacturer employing over 1,200 workers, has maintained cordial industrial relations for several years. Recently, due to rising inflation and increased living costs, the employees' trade union demanded a 15% wage increase, improved medical benefits, and better safety equipment on the shop floor. However, the management argued that declining profits and increased raw material costs made such demands financially unviable. Negotiations between the management and the trade union continued for several rounds but failed to reach an agreement. The union threatened to organize a strike, while the management considered hiring temporary workers to continue production. The HR Manager suggested adopting a collective bargaining approach involving open discussions, sharing financial information, and exploring alternative compensation such as productivity-linked incentives instead of a fixed wage increase. After several meetings, both parties agreed on a 9% wage increase, an annual productivity bonus, improved safety measures, and enhanced medical insurance. The agreement prevented the strike and strengthened trust between management and employees. Questions (i) Explain the role of collective bargaining in resolving the conflict between management and the trade union. (ii) Suggest any four measures that HR can adopt to maintain healthy industrial relations in the organization.	10M	CO5	L4

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MBA (II Semester) Regular Examinations

24MB09-OPERATIONS MANAGEMENT

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL																														
1(a)	Discuss the evolving trends in Operations Management and examine the role of technology and digital transformation of manufacturing organizations.	6M	CO1	L3																														
(b)	Compare manufacturing operations and service operations with suitable examples.	6M	CO1	L2																														
(OR)																																		
2(a)	Explain objectives and benefits of Just-in-Time (JIT) production system. How does it differ from the traditional production system?	6M	CO1	L2																														
(b)	Identify key challenges encountered by Operations Managers in today's global business environment and recommend suitable measures to overcome them.	6M	CO1	L3																														
3(a)	Illustrate factors affecting plant location and its importance.	6M	CO2	L2																														
(b)	A company is evaluating three locations (A, B, and C) for a new plant. The decision criteria and weights are given below, using Factor Rating Method- calculate weight score for each location and suggest the best one. <table border="1"><tr><th>Factors</th><th>Weight</th><th>Location A</th><th>Location B</th><th>Location C</th></tr><tr><td>Labor Cost</td><td>30%</td><td>7</td><td>8</td><td>6</td></tr><tr><td>Transportation</td><td>25%</td><td>8</td><td>6</td><td>7</td></tr><tr><td>Infrastructure</td><td>20%</td><td>6</td><td>9</td><td>7</td></tr><tr><td>Government Incentives</td><td>15%</td><td>7</td><td>6</td><td>8</td></tr><tr><td>Market Proximity</td><td>10%</td><td>9</td><td>7</td><td>8</td></tr></table>	Factors	Weight	Location A	Location B	Location C	Labor Cost	30%	7	8	6	Transportation	25%	8	6	7	Infrastructure	20%	6	9	7	Government Incentives	15%	7	6	8	Market Proximity	10%	9	7	8	6M	CO2	L4
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(OR)																																		
4(a)	Define Plant Layout and summarize its merits and demerits.	6M	CO2	L2																														
(b)	Demonstrate how Product Design and Process Design can be applied to improve organizational performance with relevant examples.	6M	CO2	L3																														
5(a)	Recite Capacity Planning and Discuss the factors influencing capacity decisions in manufacturing organizations.	6M	CO3	L2																														
(b)	A biscuit manufacturing company buys a lot of 10,000 bags of wheat per annum. The cost per bag is Rs.500 and the ordering cost is Rs 400. The inventory carrying cost is estimated at 10 percent of the price of the wheat. Determine Economic Order Quantity, No of orders to be placed during the year.	6M	CO3	L4																														
(OR)																																		
6(a)	Paraphrase Material Requirements Planning (MRP). Discuss its objectives in production planning.	6M	CO3	L2																														

24MB09-OPERATIONS MANAGEMENT

(b)	Apply principles of Supply Chain Management to illustrate the functioning of the basic components of a supply chain management system with suitable examples.	6M	CO3	L3
7(a)	Recite Work Study and explain its scope in improving productivity.	6M	CO4	L2
(b)	Paraphrase Process Flow Chart and its purpose in Operations Management.	6M	CO4	L2
(OR)				
8(a)	Discuss various techniques of job design used to improve employee productivity.	6M	CO4	L2
(b)	A worker was observed 200 times and found idle 40 times. Find: (i) Percentage idle time (ii) Percentage working time Find standard output per day. Standard time per unit = 5 minutes Working hours per day = 8 hours Efficiency = 80%	6M	CO4	L3
9(a)	Discuss structure and objectives of Quality circle in continuous quality improvement.	6M	CO5	L2
(b)	Distinguish between Variable Control Charts and Attribute Control Charts.	6M	CO5	L2
(OR)				
10(a)	Summarize ISO 9000 and ISO 14000 Series and discuss its objectives for organizational benefits.	6M	CO5	L3
(b)	Explain Kaizen Philosophy and discuss its role in continuous improvement of achieving operational excellence with suitable examples.	6M	CO5	L2
11.	Case study (Compulsory question) Calculate the earnings of three workers A, B and C. From the following Particulars by using (i) Time rate system. (ii) straight piece rate system (iii) Taylor differential piece rate system (iv) Merrick differential piece rate system Standard time for unit is 1 min Normal rate per hour (in an 8 hour a day) is Rs.5-40/- Production of worker A =390 units Production of worker B=450 units Production of worker C =600 units.	10M	CO4	L4

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MBA (II Semester) Regular Examinations

24MB10-MARKETING MANAGEMENT

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Explain the Societal Marketing Concept and discuss its objectives, advantages, and limitations.	6M	CO1	L2
(b)	Explain the Green Marketing Concept and evaluate its significance in modern business.	6M	CO1	L2
(OR)				
2.	Explain the Marketing Mix in detail. Evaluate how each element contributes to customer satisfaction and organizational success.	12M	CO1	L2
3(a)	Differentiate between Consumer Markets and Corporate Markets.	6M	CO2	L2
(b)	Define Positioning and explain its significance in marketing.	6M	CO2	L2
(OR)				
4(a)	Discuss the geographic and demographic segmentation bases with examples.	6M	CO2	L2
(b)	Illustrate psychographic and behavioral segmentation with practical examples.	6M	CO2	L4
5(a)	Explain the factors considered while selecting the final price of a product.	6M	CO3	L2
(b)	Discuss the various methods of pricing adopted by business organizations.	6M	CO3	L2
(OR)				
6(a)	Predict how firms should respond to competitors' price changes.	6M	CO3	L3
(b)	Compare Cost-based Pricing and Value-based Pricing with examples.	6M	CO3	L2
7(a)	Explain the elements of the communication process in marketing with a neat diagram.	6M	CO4	L2
(b)	Discuss the advantages and limitations of direct marketing in the digital era.	6M	CO4	L2
(OR)				
8(a)	Explain the role of Public Relations in marketing communication.	6M	CO4	L2
(b)	Discuss advertising, sales promotion, public relations, and direct marketing with suitable examples.	6M	CO4	L2
9(a)	Differentiate between Intensive, Selective, and Exclusive Distribution.	6M	CO5	L2
(b)	Explain the factors influencing the selection of a distribution strategy.	6M	CO5	L2
(OR)				
10(a)	Explain the process of Organizing the Marketing Department.	6M	CO5	L2
(b)	Discuss different types of marketing organization structures.	6M	CO5	L2
11.	Case study (Compulsory question) TechNova Mobiles Pvt. Ltd. launched a premium smartphone named Nova X with advanced AI features, a powerful camera, and long battery life. During its launch, the company adopted a price skimming strategy by fixing the price at ₹55,000 to recover research and development costs and target early adopters. After one year, several competitors introduced similar smartphones at lower prices. As a result, Nova X entered the maturity stage of the Product Life Cycle, and sales began to decline. The marketing team decided to reduce the price by 15%, introduced exchange offers, and provided festive discounts to attract price-sensitive customers. However, a major competitor further reduced its prices, creating intense competition in the market. The management is now evaluating whether to introduce additional price cuts, redesign the product, or launch a new upgraded model to maintain market share and profitability. Questions: (i) Identify the pricing strategy adopted during the launch of Nova X and justify why it was appropriate. (ii) Explain the stage of the Product Life Cycle in which Nova X is currently operating. Give reasons.	10M	CO3	L4

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MBA (II Semester) Regular Examinations

24MB11-RESEARCH METHODS FOR BUSINESS DECISIONS

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL																				
1(a)	Compare and contrast qualitative and quantitative research.	6M	CO1	L2																				
(b)	Illustrate the business research process using a flow chart and Explain each stage briefly.	6M	CO1	L3																				
(OR)																								
2.	Describe Exploratory, Descriptive and Experimental Research Designs. Compare their objectives, methods and suitable situations for application.	12M	CO1	L4																				
3(a)	Discuss the various tools and techniques used for collecting primary data in business research.	6M	CO2	L2																				
(b)	Differentiate between probability and non-probability sampling.	6M	CO2	L2																				
(OR)																								
4(a)	Explain the steps involved in designing a sampling plan for a research study.	6M	CO2	L2																				
(b)	Describe the features and applications of Likert scale and Semantic differential scale.	6M	CO2	L2																				
5(a)	Explain tabulation and its importance in research studies.	6M	CO3	L2																				
(b)	Evaluate the essential components of a well-structured research report.	6M	CO3	L3																				
(OR)																								
6(a)	Analyse the significance of editing, coding and classification of data in research.	6M	CO3	L4																				
(b)	Explain the steps in selecting in survey research design.	6M	CO3	L2																				
7(a)	Illustrate a suitable hypothesis for analysing a business research problem.	6M	CO4	L3																				
(b)	Explain chi square test.	6M	CO4	L2																				
(OR)																								
8(a)	Differentiate between parametric and nonparametric test.	6M	CO4	L2																				
(b)	A sample of 12 employees has performance scores: 52, 48, 50, 49, 51, 47, 53, 54, 48, 50, 52, 49. Test whether the population mean performance is 50 at 5% level of significance using a one sample t-test.	6M	CO4	L3																				
9(a)	Explain the nature and importance of multivariate analysis in business research.	6M	CO5	L2																				
(b)	Apply z-test for comparing two population proportions in research study.	6M	CO5	L3																				
(OR)																								
10(a)	A bank finds that 85 out of 500 credit card users defaulted in region. (i) compared to 60 out of 450 users in region. (ii) Conduct a z-test to decide if the default rates differ significantly between regions.	6M	CO5	L3																				
(b)	Explain ANOVA and types of ANOVA with its applications.	6M	CO5	L2																				
11.	Case study (Compulsory question) An automobile company evaluates three distinct promotional media channels (columns: social media, Television, Billboards) across four regional zones to see if they yield the same average sales conversion. <table><tr><td>Regional zone</td><td>Social Media(A)</td><td>Television (B)</td><td>Billboard (C)</td></tr><tr><td>North</td><td>6</td><td>5</td><td>5</td></tr><tr><td>South</td><td>8</td><td>6</td><td>4</td></tr><tr><td>East</td><td>4</td><td>3</td><td>3</td></tr><tr><td>West</td><td>6</td><td>6</td><td>4</td></tr></table> Using Two -Way ANOVA test whether three distinct promotional media channels have the same average effectiveness at 5% significance level.	Regional zone	Social Media(A)	Television (B)	Billboard (C)	North	6	5	5	South	8	6	4	East	4	3	3	West	6	6	4	10M	CO5	L4
Regional zone	Social Media(A)	Television (B)	Billboard (C)																					
North	6	5	5																					
South	8	6	4																					
East	4	3	3																					
West	6	6	4																					

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MBA (II Semester) Regular Examinations

24OE89-DATABASE MANAGEMENT SYSTEMS

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Explain the concept of a Database Management System (DBMS) and discuss its advantages and limitations.	6M	CO1	L2
(b)	Describe the Relational Data Model and discuss its components and characteristics in detail.	6M	CO1	L2
(OR)				
2(a)	Describe different types of Database Management System (DBMS) architectures such as one-tier, two-tier, and three-tier architecture with suitable diagrams.	6M	CO1	L2
(b)	Discuss the emerging trends and future challenges in database systems in detail.	6M	CO1	L2
3(a)	Draw and explain an ER diagram for a Library Management System and identify all entities, attributes and relationships.	6M	CO2	L3
(b)	Explain Object-Relational Mapping (ORM) and discuss its advantages and limitations.	6M	CO2	L2
(OR)				
4(a)	Explain the steps involved in converting an ER model into a relational schema with suitable example.	6M	CO2	L3
(b)	Compare BCNF with Third Normal Form (3NF) using suitable examples.	6M	CO2	L2
5(a)	Discuss the different categories of SQL commands with suitable examples.	6M	CO3	L3
(b)	Explain different types of joins in SQL and illustrate them with suitable examples.	6M	CO3	L3
(OR)				
6(a)	Explain the syntax and usage of CREATE TABLE and ALTER TABLE commands and demonstrate various modifications on an existing table.	6M	CO3	L3
(b)	Write a trigger for maintaining salary audit information in an Employee database and explain its working.	6M	CO3	L3
7(a)	Explain the concept of transaction processing in Database Management System (DBMS) with suitable examples.	6M	CO4	L2
(b)	Describe the Two-Phase Commit (2PC) protocol with the help of a neat diagram.	6M	CO4	L2
(OR)				
8(a)	Explain concurrency control and recovery mechanisms in Database Management System (DBMS) in detail.	6M	CO4	L2
(b)	Discuss deferred update and immediate update techniques with suitable examples.	6M	CO4	L3
9(a)	Discuss various query optimization techniques used by database management systems with suitable examples.	6M	CO5	L3
(b)	Compare spatial databases and temporal databases highlighting their features and applications.	6M	CO5	L2
(OR)				
10(a)	Explain insertion and deletion operations of B+ Tree indexing technique with suitable example.	6M	CO5	L3
(b)	Explain the architecture of a data warehouse with the help of a neat diagram.	6M	CO5	L2
11.	Data Definition and Querying Case Study (Compulsory Question): Online Shopping Portal An e-commerce company stores CUSTOMER, PRODUCT, ORDERS, and ORDER_ITEMS data. - Write DDL commands to create the tables. - Apply integrity constraints appropriately. - Write an SQL query to find the top five customers based on purchase amount. - Create a trigger that reduces product stock whenever an order is placed.	10M	CO3	L3

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MBA (II Semester) Regular Examinations

24MB12-BUSINESS ANALYTICS

Time : 3 hours

Max. Marks: 70

Answer one question from each unit

All questions carry equal marks

All questions carry equal marks																												
Q.No	Questions							Marks	CO	BL																		
1(a)	Describe key components of Data Analytics with suitable Examples.							6M	CO1	L2																		
(b)	Illustrate different Categories of Data Analytics.							6M	CO1	L3																		
(OR)																												
2(a)	Illustrate the Applications of Data Analytics in different sectors.							6M	CO1	L3																		
(b)	Discuss the Role of Data in Organization's Decision-making process.							6M	CO1	L2																		
3(a)	Differentiate between RAPIDMNER and TABLEAU tools for data analysis and visualizations.							6M	CO2	L3																		
(b)	The following data show the number of hours studied and marks obtained by students. <table border="1"><thead><tr><th>Student</th><th>Hours Studied (X)</th><th>Marks (Y)</th></tr></thead><tbody><tr><td>A</td><td>1</td><td>40</td></tr><tr><td>B</td><td>2</td><td>50</td></tr><tr><td>C</td><td>3</td><td>55</td></tr><tr><td>D</td><td>4</td><td>65</td></tr><tr><td>E</td><td>5</td><td>70</td></tr></tbody></table> Question: (i) Fit the linear regression equation $Y=a+bX$ (ii) Estimate the marks of a student who studies 6 hours.							Student	Hours Studied (X)	Marks (Y)	A	1	40	B	2	50	C	3	55	D	4	65	E	5	70	6M	CO2	L4
Student	Hours Studied (X)	Marks (Y)																										
A	1	40																										
B	2	50																										
C	3	55																										
D	4	65																										
E	5	70																										
(OR)																												
4(a)	Elucidate the Visualization tools that are Commonly used in time series analysis.							6M	CO2	L2																		
(b)	Define Time series analysis and illustrate its applications, advantages and disadvantages.							6M	CO2	L3																		
5(a)	Analyze the effectiveness of data visualization techniques in Business Decisions.							6M	CO3	L4																		
(b)	Discuss the Statistical methods used for Summarizing Data.							6M	CO3	L2																		
(OR)																												
6(a)	Describe steps involved in data cleaning Process in real time scenario.							6M	CO3	L2																		
(b)	How does data visualization support decision-making?							6M	CO3	L2																		
7.	Find the Standard Deviation and Variance of the following distribution: <table border="1"><thead><tr><th>Class-Interval</th><th>15-25</th><th>25-35</th><th>35-45</th><th>45-55</th><th>55-65</th><th>65-75</th><th>75-85</th></tr></thead><tbody><tr><td>Frequency</td><td>6</td><td>11</td><td>7</td><td>4</td><td>4</td><td>2</td><td>1</td></tr></tbody></table>							Class-Interval	15-25	25-35	35-45	45-55	55-65	65-75	75-85	Frequency	6	11	7	4	4	2	1	12M	CO4	L3		
Class-Interval	15-25	25-35	35-45	45-55	55-65	65-75	75-85																					
Frequency	6	11	7	4	4	2	1																					
(OR)																												

24MB12-BUSINESS ANALYTICS

8(a)	A total of 25 patients admitted to a hospital are tested for levels of blood sugar, (mg/dl) and the results obtained were as follows: 87, 71, 83, 67, 85, 77, 69, 76, 65, 85, 85, 54, 70, 68, 80, 73, 78, 68, 85, 73, 81, 78, 81, 77, 75 (i) Formulate frequency table (ii) Find the Arithmetic Mean.	6M	CO4	L4																																							
(b)	Define Descriptive Analytics and explain its significance in business decision making.	6M	CO4	L2																																							
9.	The following data show the annual rainfall and crop yield. <table><tr><th>Rainfall (cm) (X)</th><th>Crop Yield (Quintals) (Y)</th></tr><tr><td>40</td><td>18</td></tr><tr><td>50</td><td>22</td></tr><tr><td>60</td><td>27</td></tr><tr><td>70</td><td>31</td></tr><tr><td>80</td><td>36</td></tr></table> (i) Fit the least squares regression line. (ii) Estimate the crop yield when rainfall is 65 cm.	Rainfall (cm) (X)	Crop Yield (Quintals) (Y)	40	18	50	22	60	27	70	31	80	36	12M	CO5	L4																											
Rainfall (cm) (X)	Crop Yield (Quintals) (Y)																																										
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70	31																																										
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(OR)																																											
10(a)	Calculate Karl Pearson's Correlation Coefficient for the following data: <table><tr><td>X</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td></tr><tr><td>Y</td><td>12</td><td>18</td><td>22</td><td>28</td><td>35</td></tr></table>	X	10	15	20	25	30	Y	12	18	22	28	35	6M	CO5	L4																											
X	10	15	20	25	30																																						
Y	12	18	22	28	35																																						
(b)	Fit a Simple Regression Equation using the following data: <table><tr><td>X</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr><tr><td>Y</td><td>5</td><td>8</td><td>11</td><td>14</td><td>17</td></tr></table>	X	2	4	6	8	10	Y	5	8	11	14	17	6M	CO5	L4																											
X	2	4	6	8	10																																						
Y	5	8	11	14	17																																						
11.	Case study (Compulsory question) The following data represent the scores of 12 students in Computer Science and Statistics. <table><tr><th>Student</th><th>Computer Science</th><th>Statistics</th></tr><tr><td>A</td><td>91</td><td>90</td></tr><tr><td>B</td><td>85</td><td>82</td></tr><tr><td>C</td><td>76</td><td>78</td></tr><tr><td>D</td><td>88</td><td>85</td></tr><tr><td>E</td><td>93</td><td>95</td></tr><tr><td>F</td><td>81</td><td>82</td></tr><tr><td>G</td><td>70</td><td>72</td></tr><tr><td>H</td><td>85</td><td>85</td></tr><tr><td>I</td><td>79</td><td>78</td></tr><tr><td>J</td><td>88</td><td>90</td></tr><tr><td>K</td><td>74</td><td>72</td></tr><tr><td>L</td><td>96</td><td>95</td></tr></table> Calculate Spearman's Rank Correlation Coefficient for the subjects.	Student	Computer Science	Statistics	A	91	90	B	85	82	C	76	78	D	88	85	E	93	95	F	81	82	G	70	72	H	85	85	I	79	78	J	88	90	K	74	72	L	96	95	10M	CO5	L4
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