

FACULTYOFMANAGEMENT MBA(CBCS) III-Semester Examination, January2025 **Subject: Operations Management** Paper No.: MB-301

Time: 2 1/2 Hours

Max.Marks:60

# PART-A (Short Answer Type)

#### Note: Answer all the questions.

1. What do you mean by Agile manufacturing?

- 2. Write a note on loan operations?
- 3. Define Economic order quantity.
- 4. Write a note on TQM.
- 5. What is Bin Card?

PART-B (Essay Answer Type)

#### Note: Answer all the questions.

6. (a) Define Operations Management? Distinguish between Operations and Production

(OR)

(OR)

(b) Critically analyze the recent trends in Production and Operations Management?

### 7. (a) Discuss the steps in PPC?

(b) Differentiate between MRD-I & MRD-II

8. (a) Discuss the factors influencing product design?

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(b) Determine the sequence that shall minimize the total processing time?

M1	15	16	14	12	14	18
M2	6	10	7	10	11	8
M3	10	9	8	11	7	13

9. (a) What is Productivity? Elaborate on factors affecting industrial productivity.

(OR)

(OR)

(b) Suggest optimal replacement policy for the given data? Purchase price of machine is Rs. 5,000.

Year	1	2	3	4	5	6	7	8
<b>Running Costs</b>	150	1600	1800	2100	2500	2900	3400	4000
Salvage Value	3500	2500	1700	1200	800	500	400	200

10. (a)Discuss the objectives and functions of stores management?

(b)Classify the items using ABC Analysis?

Annual								
Usage	3000	60000	20	200	350	6000	40	300
Unit Price	200	70	2	500	12.5	9	25	1000

(5 x8=40 Marks)

(5 x2=10 Marks)

Management?

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**11.** The following data were obtained over a five day period to indicate X (mean) and R (range) control charts for a quality characteristics of certain manufacturing product, that had required a substantial amount of rework. The sample size was 5. Two samples were taken per day.

Samples		Obs	ervat	ions	
	T	II		IV	V
1	10	12	13	8	9
2	7	10	8	11	9
3	11	12	9	12	10
4	10	9	8	13	11
5	8	11	11	7	7
6	11	8	8	11	10
7	10	12	13	13	9
8	10	12	12	10	12
9	12	13	11	12	10
10	10	13	7	9	12

- (i). Compute the control limits and draw X (mean) and R (range) charts.
- (ii). Plot the control chart for mean and range and discuss whether the production process is in control



## FACULTY OF MANAGEMENT MBA (CBCS) III - Semester Examination, January 2025 Subject: E-Global Business Paper No. : MB-302

Time: 2 1/2 Hours

Max. Marks: 60

 $(5 \times 2 = 10 \text{ Marks})$ 

# PART – A (Short Answer Type)

#### Note: Answer all the questions.

1. What are the key drivers of globalization in the digital economy?

- 2. Explain the concept of influencer marketing in e-commerce.
- 3. What is warehouse automation, and how does it improve e-commerce operations?
- 4. How does Conversion Rate Optimization (CRO) benefit online businesses?
- 5. What are the ethical challenges associated with AI in e-commerce decision-making?

## PART – B (Essay Answer Type)

Note: Answer all the questions.

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 $(5 \times 8 = 40 \text{ Marks})$ 

- 6. (a) Discuss how Artificial Intelligence (AI) and automation are driving e-commerce growth. (OR)
  - (b) How do social media platforms shape customer engagement in global business?
- 7. (a) Describe the role of online platforms in the peer-to-peer (P2P) sharing economy. (OR)
  - (b) Explain the significance of omni-channel retailing and how it integrates online and offline channels.
- 8. (a) Analyze the role of cloud computing in ensuring scalability for e-commerce operations.

(OR)

(b) What are the challenges in managing cross-cultural customer service for global businesses?

- 9. (a) How do companies use User Experience (UX) design to enhance online conversions? (OR)
  - (b) Discuss the importance of competitive analysis and benchmarking in the digital marketplace.
- 10. (a) How is blockchain technology transforming payment systems in e-commerce?

## (OR)

(b) Evaluate the impact of voice commerce and smart speakers on online shopping behavior.

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11. XYZ Electronics is an online retailer that expanded rapidly, offering products worldwide. As orders increased, the company faced challenges in managing its supply chain, especially in ensuring timely last-mile deliver. XYZ adopted cloud computing to manage its operations, which provided scalability and real-time monitoring of inventory.

However, the company encountered a cyber security breach, where customer data was compromised. XYZ immediately implemented data encryption and two-factor authentication to enhance security. It also complied with data protection regulations, boosting customer trust.

Despite these challenges, XYZ improved customer satisfaction by offering reverse logistics for returns and exchanges. This approach ensured smooth processing of refunds, enhancing customer loyalty.

#### Questions:

- (i) How did cloud computing help XYZ manage its supply chain effectively?
- (ii) What measures did XYZ take to enhance cybersecurity after the breach?

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(iii) Why is compliance with data protection regulations important for e-commerce companies like XYZ?



## FACULTY OF MANAGEMENT MBA (CBCS)<sup>°</sup>III - Semester Examination, January 2025 Subject: Total Quality Management Paper No. : MB-303

Time: 2 1/2 Hours

Max. Marks: 60

# PART – A (Short Answer Type)

## Note: Answer all the questions.

- 1. Define TQM
- 2. Name any two tools used for process improvement in TQM
- 3. What is the purpose of Design of Experiments (DOE)?
- 4. State two objectives of Six Sigma programs
- 5. Mention the role of TQM in IT Sector

## PART – B (Essay Answer Type)

#### Note: Answer all the questions.

 $(5 \times 8 = 40 \text{ Marks})$ 

 $(5 \times 2 = 10 \text{ Marks})$ 

6. (a) Explain the historical evolution of TQM and its importance today.

(OR)

(b) Describe the dimensions of product quality and service quality with examples.

7. (a) Discuss the significance of the PDCA cycle and its application in TQM.

(OR)

- (b) What are Quality Circles, and how do they function as an improvement tool and technique in quality management?
- 8. (a) How does Quality Function Deployment (QFD) link customer needs to product design?

(b) Explain the use of Taguchi methods in quality improvement.

9. (a) Discuss the role of Six Sigma frameworks in solving operational problems.

(OR)

- (b) What are the key metrics used in Six Sigma, and explain the benefits and costs of implementing Six Sigma?
- 10. (a) What are the challenges in implementing TQM in pharmaceutical industries?

#### (OR)

(b) How can financial services benefit from the application of TQM principles?

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## PART-C Case Study (10 Marks)

#### Total Quality Management (TQM) at Excel Electronics 11.

Excel Electronics, a consumer electronics manufacturer, faced rising product defects and customer complaints, threatening its market share. To address these issues, the company implemented Total Quality Management (TQM), involving all employees in quality improvement.

Using Statistical Process Control (SPC), Excel monitored production processes to maintain high standards. The company collaborated with suppliers to ensure quality materials and incorporated customer feedback to improve product design. Quality circles were introduced, encouraging employees to identify issues and implement solutions. Regular training and quarterly reviews ensured continuous improvement.

Within a year, product defects dropped by 30%, customer complaints by 40%, and market share increased by 15%. Excel's efforts were rewarded with ISO 9001 certification, recognizing its commitment to quality.

#### **Questions:**

- 1. How did quality circles contribute to Excel's continuous improvement efforts?
- 2. How does Statistical Process Control (SPC) help maintain product quality?
- 3. What does ISO 9001 certification indicate about a company's quality commitment?

# FACULTYOFMANAGEMENT A (CBCS) III-Semester Examination, January 2025 Subject: Investment Analysis & Portfolio Management Paper: 304 (Elective–I: Finance)

Time: 2 1/2 Hours

Max.Marks:60

(5x2 = 10 Marks)

# PART-A (Short Answer Type)

## Note: Answer any the questions.

- 1. Explain the concept of ex-ante and ex-post returns.
- 2. What is Efficient Frontier?
- 3. What is Holding Period Return? How is it calculated?
- 4. Write about the P/E multiplier.
- 5. What is Reward to Volatility Index?

## PART-B (Essay Answer Type)

## Note: Answer all the questions.

6. (a) Explain the steps in the investment decision process.

(OR)

- (b) Differentiate between Fundamental and Technical analysis.
- 7. (a) Explain the Markowitz theory with assumptions and limitations.

#### (OR)

- (b) Stock A has an expected return of 15% and a standard deviation of 40%. Stock B has an expected return of 7% and a standard deviation of 30%. What is the portfolio return and risk when correlation between A and B is 0, + 0.4 and 0.4 assuming equal weights?
- 8. (a) Describe the types of Bonds.

#### (OR)

- (b) Calculate the Macaulay's Duration of a three-year bond that has a par value of Rs.1, 000 with a coupon rate of 5% and a YTM of 6%. Also calculate the modified duration.
- 9. (a) Explain the various approaches to equity valuation.

## (OR)

(b) Given Rf = 6%, Rm = 15% expected returns and expected Betas are as follow:

Stock	Expected Return Expected Bet			
A	14%	1.20		
В	15%	0.75		
С	13%	1.50		
D	20%	1.60		
E	10%	0.80		

Which stock is undervalued and which one is overvalued relative to expected return?



(5x8 = 40 Marks)

10. (a) Explain the genesis of mutual funds in India.

(OR)

(b) Calculate Sharpe ratio, Treynor ratio and Jensen alpha for each portfolio:

Portfolio	Rp(%)	σр	Вр
X	16	32	1.90
Y	15	27	1.25
Z	7.3	17	0.75
Market Return	11.3	22	1.00
<b>Risk free rate</b>	5.8	0	0

## PART - C Case Study – 10 Marks

11. Give the following information:

	1	4	
Economic condition	Prob	Return on stock - X (%)	Return on stock - Y (%)
High growth	0.30	28	20
Lo growth	0.30	25	16
Stagnation	0.25	22	10
Recession	0.15	8	6

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Questions:

(a) Calculate expected return

(b) Calculate standard deviation

(c) Assume you are the investor. Which stock do you prefer? Give reasons.



FACULTY OF MANAGEMENT MBA (CBCS) III - Semester Examination, January 2025 Subject: Banking and Insurance Paper No. : 305 (Elective – II : Finance)

Time: 2 1/2 Hours

Max. Marks: 60

 $(5 \times 2 = 10 \text{ Marks})$ 

# PART + A (Short Answer Type)

## Note: Answer all the questions.

- 1. What is Wholesale Banking?
- 2. What is Loan Pricing?
- 3. What is Bancassurance?
- 4. Write about the concept of Insurance.
- 5. Write about Motor Insurance

## PART – B (Essay Answer Type) 4

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#### Note: Answer all the questions.

- 6. (a) Explain the structure of Indian banking system.
  - (b) Explain the evolution of banking system in India.
- 7. (a) What are the different types of loans?

(OR)

(OR)

- (b) Discuss the causes of NPA in banks.
- 8. (a) Discuss the vital aspects of BASEL II & III.
  - (OR)
  - (b) Explain in detail about Retail Banking Products.
- 9. (a) Explain the duties and powers of IRDA.
  - (OR)
  - (b) Explain the nature and characteristics of insurance.
- 10. (a) Explain the different types of life insurance products.
  - (OR)
  - (b) Explain the types of General Insurance.

 $(5 \times 8 = 40 \text{ Marks})$ 

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#### 11. Case Study: Insurance-Linked Savings Account in XYZ Bank

XYZ Bank, a leading financial institution, introduced a unique product called the "Insurance-Linked Savings Account" (ILSA) as part of its new customer acquisition strategy. This product combines the features of a standard savings account with the added benefit of life insurance coverage. The product aims to attract middle-income customers by offering both savings and insurance under one roof.

In the ILSA, customers receive a small life insurance policy based on the average balance in their savings account. For example, if a customer maintains a monthly average balance of INR 50,000, they would be eligible for an insurance cover of INR 2,00,000 at no additional cost. The bank pays the insurance premium, and the coverage increases as the customer's average balance increases.

The bank's research team observed that people in the target segment were underinsured and often did not prioritize life insurance. By introducing the ILSA, XYZ Bank aimed to fulfill two objectives:

- 1. Increase customer acquisition and deposits in savings accounts.
- 2. Provide a social benefit by helping families get basic life insurance coverage.

Initially, the product received a positive response. Customers found the dual benefits attractive, especially since they could access their savings while having a backup in the form of life insurance coverage. However, within six months, the bank started facing several challenges:

- 1. Customers were withdrawing funds frequently, reducing their average balances and, thus, lowering the insurance coverage.
- 2. The bank observed that most account holders were not increasing their deposits, limiting growth.
- 3. Awareness of the insurance benefit was still low, and many customers were unaware of how it worked.

To address these challenges, the bank is considering the following strategies:

- 1. **Incentivizing Higher Balances**: Offering tiered rewards or additional interest rates for customers who maintain higher balances.
- 2. **Enhanced Communication**: Running awareness campaigns to educate customers on the insurance benefits and how they work.
- 3. **Penalty for Low Balance**: Introducing a nominal penalty for customers who fail to maintain a minimum balance to ensure they benefit from the insurance cover. The bank's management is now evaluating which strategy would be the most effective in promoting sustainable growth for the ILSA product while ensuring that customers benefit from both the savings and insurance elements.

## Questions (10 Marks)

- 1. Analyze the main challenges XYZ Bank faced with the ILSA product. (3 Marks)
- 2. Evaluate the three strategies suggested by the bank. Which strategy, in your opinion, would be the most effective for both the bank and the customers? Justify your answer. (4 Marks)
- 3. How could XYZ Bank ensure that customers are more aware of the benefits of the ILSA product? Suggest two additional approaches the bank could consider for better awareness. *(3 Marks)*



FACULTY OF MANAGEMENT MBA (CBCS) III - Semester Examination, January 2025 Subject: Advertisement and Retail Management Paper: MB-305

(Elective – II : Marketing)

Time: 2 1/2 Hours

Max. Marks: 60

 $(5 \times 2 = 10 \text{ Marks})$ 

 $(5 \times 8 = 40 \text{ Marks})$ 

PART - A (Short Answer Type)

## Note: Answer any five questions.

- 1. Discuss about Ad Copy.
- 2. Write a short note on Media Strategy.
- 3. List out types of Retail Formats?
- 4. What is Unorganized Retailing?
- 5. Explain Visual Merchandising.

# PART - B (Essay Answer Type)

#### Note: Answer all the questions.

6. (a) What is creativity in advertising? Explain briefly the various objectives of advertising with suitable examples.

(OR)

- (b) Expand DAGMAR. Discuss the role and significance of DAGMAR model in advertising planning.
- 7. (a) What is media mix? Demonstrate on the various elements of media mix.

(OR)

- (b) Explain the role of technology in shaping modern media planning and execution.
- 8. (a) Define retail management. Describe the key objectives and functions of retailing. **(OR)** 
  - (b) Discuss on the different types of retail formats and their relevance in today's retail environment.
- 9. (a) Compare and contrast the organized and unorganized retail sectors in India.

(OR)

- (b) Explain the cultural challenges faced by International retailers when entering foreign markets.
- 10. (a) Define pricing. Discuss on the key factors that influence retail pricing decisions.

(OR)

(b) Define logistics management. Evaluate the importance of logistics management in the retail supply chain.

11. The case "Amul Vs Kwality Walls –Ice Cream Ad War" talks about the repercussions of the Controversial TVC and print media ads put up by Gujarat Cooperative Milk Marketing Federation (GCMMF), markers of Amul ice cream. The ads promoted Hindustan Unilever Ltd. (HUL), markers of 'Kwality Walls' frozen dessert and ice creams, along with Vadilal Industries Ltd. and Vadilal Diary International Ltd. to file a case in the Bombay High Court Against Amul for product disparagement. HUL and its co-petitioners later won the case, thus preventing the controversial ads from being aired.

The case starts off with a description of the controversial ads, which mainly talked about ice creams being a healthier option than frozen desserts. The case also delves into the reasons that prompted Amul to air the ads and the benefits it intended to gain from it. The case then highlights how the ad war was in reality a disguise for an ongoing brand war between HUL and Amul for market share in the ice cream market.

## Questions:

- (i) Analyze the different forms of advertising appeals.
- (ii) Explore the advertising ethics involved in comparative advertising.

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(iii) Evaluate the impact of ads in raising consumer awareness.



FACULTY OF MANAGEMENT

MBA (CBCS) III - Semester Examination, January 2025 Subject: Compensation Management Paper No. : MB-304 (Elective – I : HRM)

Time: 2 1/2 Hours

Max. Marks: 60

 $(5 \times 2 = 10 \text{ Marks})$ 

 $(5 \times 8 = 40 \text{ Marks})$ 

Code No: G-018

## PART – A (Short Answer Type)

# Note: Answer all the questions.

- 1. What is Variable Pay?
- 2. What is meant by external equity in compensation?
- 3. What are the functions of Pay Commissions?
- 4. Differentiate between Employee Benefits and Services.
- 5. Describe Agency Theory.

## PART – B (Essay Answer Type)

(OR)

## Note: Answer all the questions.

- 6. (a) Explain the Determinants of compensation and write note on compensation principles.
  - (b) The economic theories of wages fail to provide a complete explanation of the problems of wage determination. Discuss.
- 7. (a) Discuss the need of job design in the context of compensation management decisions.

(OR)

- (b) Differentiate between individual and team-based compensation and discuss the conditions for successful team incentives.
- 8. (a) What is the machinery for fixing minimum wages? Discuss salient features of the Minimum Wages Act, 1948.
  - (b) Describe the pay structure that is practiced in India for different occupational groups.
- 9. (a) What are the objectives of employee benefits? Describe the emerging trends in the area of beneficial services.

(OR)

(OR)

- (b) Define fringe benefits and describe the most commonly offered fringe benefits.
- 10. (a) Explain the unique features of Executive compensation and discuss the strategies for Executive compensation.

(OR)

(b) Describe the elements of expatriate's compensation package.

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## 11. Analyze the case presented below and answer the following questions. Employee Benefits and Services in India

XYZ Tech Pvt. Ltd. is a mid-sized IT company based in Bangalore, India. The company employs around 500 employees, primarily software developers, project managers, and support staff. The organization prides itself on its innovative and employee-centric work culture.

In recent years, the company has faced increased competition for talent from multinational corporations and local startups. To attract and retain top talent, XYZ Tech revamped its employee benefits and services, focusing on providing a comprehensive package that addresses employees' professional and personal needs.

## **Employee Benefits and Services Offered:**

#### 1. Financial Benefits:

Competitive salaries with annual performance-based increments. Provident Fund (PF) contributions. Gratuity as per the Payment of Gratuity Act. Employee Stock Option Plan (ESOP). Life insurance and accident coverage.

### 2. Health and Wellness:

Comprehensive health insurance covering employees and their dependents. Access to an on-site fitness center and yoga sessions. Monthly wellness webinars and mental health counseling services.

#### 3. Work-Life Balance:

Flexible work hours and remote work options. Paid leaves, including annual leave, sick leave, and maternity/paternity leave. Special leave for family emergencies.

## 4. Learning and Development:

Sponsored certifications and skill development programs. Access to online learning platforms. Mentorship programs for career progression.

## 5. Employee Engagement and Recognition:

Monthly "Employee of the Month" awards with monetary rewards. Quarterly team outings and annual company retreats. Celebration of festivals and cultural events at the workplace.

## 6. Other Services:

Subsidized meals at the cafeteria. Transportation allowances or shuttle services. Childcare facilities for working parents.

## Challenges

Despite these offerings, the company has observed the following issues: A rising attrition rate, particularly among mid-level employees.

Feedback indicating dissatisfaction with the career progression opportunities.

Employees feel that the work-life balance is still inadequate, especially during project deadlines.

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## Questions

- 1. Evaluate the effectiveness of XYZ Tech's current employee benefits and services in addressing employee needs. What areas require improvement?
- 2. What additional benefits or services would you recommend to reduce attrition and improve employee satisfaction?
- 3. How can the company balance project deadlines with the employees' need for work-life balance?
- 4. Discuss the potential impact of introducing a "Career Development Framework" on employee retention and satisfaction.
- 5. How can involving employees in policy-making enhance engagement and trust in the organization?

Max. Marks: 60

# FACULTY OF MANAGEMENT

MBA (CBCS) III - Semester Examination, January 2025 Subject: Industrial Relations and Labour Laws Paper No. : MB-305 (Elective - II : HMR)

Time: 2 1/2 Hours

PART – A

# (Short Answer Type)

# Note: Answer all the questions.

- 1. Illustrate the significant conditions for good industrial relations?
- 2. Define conciliation?
- 3. What are the functions of Trade Unions?
- 4. Explain the activities of ILO?
- 5. Enlist the types of occupational hazards?

## PART – B (Essay Answer Type)

(5 x 8 = 40 Marks)

(5 x 2 = 10 Marks)

# Note: Answer all the questions.

- 6. (a) Illustrate Dunlop's approach to industrial relations.
  - (OR) (b) Demonstrate the status of industrial relations in India focusing on the labour dispute at Maruti Suzuki India Ltd.
- 7. (a) Write a note on Alternate Dispute Redressal strategies.

(OR)

- (b) Explicate the importance of workers' participation in managing industrial democracy.
- 8. (a) Discuss the historical background of trade unions in India.
  - (OR) (b) Discuss the role of trade unions in protecting industrial relations in globalized economy.
- 9. (a) Enumerate the principles of labour welfare and write a note on recommendations of National Commission on labour.

(OR)

- (b) What are the significant provisions under Social Security Code 2020?
- 10. (a) What is POSH Policy? Describe the salient features of the related enactment illustrating the Visakha case.

#### (OR)

(b) What are the salient features of Contract Labour (Regulation & Abolition) Act?

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## 11. Analyze the case presented below and answer the following questions.

### Industrial Relations at Prime Textiles Ltd.

Prime Textiles Ltd. is a medium-sized garment manufacturing company with 500 employees. It has been operational for 15 years and enjoys a stable market share in the textile industry. Over the years, the company has fostered good relationships with its workforce through a robust employee engagement program. However, due to rising costs and market competition, the management recently announced a wage freeze for the upcoming financial year.

The announcement of the wage freeze was not well received by the employees. A majority of the workforce is represented by the United Workers' Union (UWU), which views the wage freeze as an unfair move, especially given the company's profits last year. The union alleges that the management did not engage in proper consultation before making the decision.

Tensions escalated when workers staged a peaceful protest outside the factory, demanding that the management reconsider its decision. The management, in response, held a meeting with union representatives but was firm on its stance, citing financial constraints and a need to remain competitive in the market.

The situation worsened when a faction of the workforce went on an unplanned strike, disrupting production. This led to a breakdown in communication between the union and management. The local labor commissioner has been brought in to mediate and help resolve the dispute.

## Key Stakeholders:

- 1. Management of Prime Textiles Ltd.
- 2. United Workers' Union (UWU)
- 3. Employees (both unionized and non-unionized)
- 4. Local labor commissioner

#### Questions:

- 1. What are the primary reasons for the conflict between the management and the workers?
- 2. How might the lack of consultation with employees have contributed to the dispute?
- 3. Evaluate the management's decision to impose a wage freeze without prior discussions. Was it justified? Why or why not?
- 4. How effective do you think the workers' strike will be in resolving the issue?
- 5. Suggest three measures the management could take to rebuild trust with employees.

FACULTYOFMANAGEMENT MBA (CBCS) III-Semester Examination, January2025 Subject: Database Management Systems Paper: MB-304 (Elective–I: System with Business Analysis)

Time: 2 <sup>1</sup>/<sub>2</sub>Hours

Max.Marks:40

(5x2 = 10 Marks)

Code No: G-020

# PART-A (Short Answer Type)

## Note: Answer any the questions.

- 1. What is Data Abstraction?
- 2. Explain MYSQL?
- 3. Define Hashing.
- 4. Explain ACID property.
- 5. Define not null with Syntax.

## PART-B (Essay Answer Type)

#### Note: Answer all the questions.

- 6. (a) Explain different levels of data abstraction.
  - (b) Evaluate different types of integrity constraints in ER Model?
- 7. (a) Discuss about open source and commercial DBMS in detail?

(b) Explain in detail about the features of DB2 and SQL Server?

- 8. (a) What is Query Processing? Explain B-trees. (OR)
  - (b) Discuss Query Optimization algorithms in detail?
- 9. (a) Describe the concept of serializability with suitable examples?

(OR)

(OR)

- (b) What is database recovery? Explain its process.
- 10. (a) What are different built-in functions and aggregate functions?
  - (b) Explain various SQL commands for data definition and data manipulation with suitable examples.

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(5x6 = 30 Marks)





FACULTY OF MANAGEMENT MBA (CBCS) III - Semester Examination, January 2025 Subject: Business Analytics Paper No. : MB-305 (Elective – II : System with Business Analytics)

Time: 2 1/2 Hours

Max. Marks: 60

 $(5 \times 2 = 10 \text{ Marks})$ 

 $(5 \times 8 = 40 \text{ Marks})$ 

## PART – A (Short Answer Type)

## Note: Answer all the questions.

- 1. Explain the role of big data in business analytics.
- 2. What is a data dashboard, and how does it assist decision-makers in interpreting data?
- 3. Define data mining and describe its relationship with business intelligence.
- 4. Recall the importance of prescriptive analytics in making data-driven business decisions.
- 5. What are control statements in R, and why are they useful? Provide examples.

# PART – B (Essay Answer Type)

#### Note: Answer all the questions.

6. (a) How is business analytics implemented in practice across different industries? Give examples.

## (b) List and describe the different types of data commonly used in business analytics.

7. (a) Recall the benefits of using visualization techniques like tables, cross-tabulations and charts in data analysis?

#### (OR)

(OR)

- (b) Explain the process of creating a cross-tabulation table in Excel or SPSS and its utility in analyzing categorical data.
- 8. (a) Dissect the concept of multiple regression analysis and discuss its application in a business setting.

(OR)

- (b) What is cause-effect modeling, and how can it assist in understanding relationships between variables in predictive analytics?
- 9. (a) Describe how the Cutting Plane algorithm works and provide an example of its application.

#### (OR)

- (b) What is Web Analytics and how does it support prescriptive decision-making in digital marketing?
- 10. (a) Discuss how the R environment supports data visualization and statistical analysis.

(OR)

(b) Explore on how to handle missing values in a dataset using R.

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#### 11. Predictive Analytics in Retail

Mega Mart, a multinational retail chain, operates stores across various regions with vastly different customer bases. They aim to leverage predictive analytics to improve their inventory management and meet regional demands. Over the years, they have gathered massive amounts of historical sales data for different products, including seasonality factors, regional preferences, and promotional impact on sales. However, the complexity of demand forecasting increases with the diversity of customer preferences across regions and the need for efficient stock management.

Mega Mart is particularly interested in understanding how demand might fluctuate for seasonal items (e.g., winter clothing in colder regions or beachwear in warmer areas) and during promotional events (such as holiday sales). They plan to integrate this data into a predictive model to optimize stock levels, reduce wastage, and improve sales turnover. They also face challenges, such as ensuring data consistency, addressing demand fluctuations across diverse locations, and handling unexpected shifts in customer behavior.

#### **Objectives:**

- Implement a demand forecasting model to optimize stock levels and avoid over- or understocking.
- Reduce wastage by identifying demand patterns and accurately predicting product life cycles.
- Improve customer satisfaction by ensuring the availability of popular products.

#### Questions:

- a. How does predictive analytics help Mega Mart in understanding and meeting regional demand variations?
- b. What types of data should Mega Mart collect to improve its demand forecasting, and why?
- c. How would Mega Mart handle inaccuracies in data, such as missing entries or outliers?