QP Code: R252D008	Reg.					AY - 24
	No					

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR (GIET UNIVERSITY)



PART - A

M.B.A. (Second Semester) Regular/SupplementaryTuring Examinations, May – 2025

23MBAPC12008 - Business Analytics (MBA)

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

CO₅

CO₁

10

K2

K4

Time: 3 hrs Maximum: 60 Marks

(The figures in the right hand margin indicate marks.)

Q.1.	Answer ALL questions	CO#	Blooms Level
a.	Describe the purpose of business analytics in improving organizational decision-making.	CO1	K2
b.	List and briefly explain the three V's of big data.	CO2	K 1
c.	Explain how binomial distribution models the probability of outcomes in repeated	CO3	K2
	independent trials.		
d.	Outline the ETL Process in a data warehouse environment.	CO4	K2

PART - B (10 x 5 = 50 Marks)

Identify key reasons for using visual techniques to represent data in business reports.

Answer all the questions				Blooms
				Level
2. a.	Discuss the Core Concepts that form the basis of business analytics and describe	5	CO1	K2
	how they support data-driven decision-making.			
b.	Analyse how business analytics contributes to gaining and sustaining a competitive	5	CO1	K4
	advantage in today's digital business environment.			

OR

c. FreshMart is a regional grocery chain operating across three cities. Despite steady foot traffic, sales growth has been flat for the past two years. The management suspects poor product placement, suboptimal pricing, and a lack of personalization in promotions are contributing to the stagnation. To address this, FreshMart decides to adopt basic business analytics tools to analyse customer behaviour, sales data, and inventory patterns.

The company collects and integrates point-of-sale (POS) data, customer loyalty card usage, and seasonal inventory records. They use data visualization tools like Excel and Tableau to identify high-performing products, track weekly trends, and assess which promotions yield the highest returns. An analyst also uses basic regression analysis to study the relationship between pricing and sales volume. As a result, FreshMart learns that certain product categories (like organic produce and snacks) perform significantly better during specific times of the year, and that targeted discounts for loyalty members increase average basket size by 15%.

Based on these insights, FreshMart redesigns its store layout, customizes promotions for loyalty card holders, and adjusts prices dynamically for select products. Within three months, revenue increases by 10% across the pilot stores.

Discussion Questions:

- i). Explain the role of analytics in helping FreshMart improve sales performance.
- ii). What types of data were used in this case, and how were they applied to solve FreshMart's challenges?
- iii). How does data visualization support decision-making for non-technical business users like store managers?
- iv). Suggest two other areas (besides sales and pricing) where FreshMart could apply business analytics to improve operations.
- v). How could FreshMart scale this pilot program across all stores while ensuring consistent results?
- 3. a. Evaluate the key factors contributing to information overload in modern 5 CO2 K5 organizations and assess their impact on productivity and decision quality.

b.	Explain the role of	5	CO2	K2					
	implementation of	1							
	1	1		OR					
c.	Examine the ten di	mensions of bi	ig data, co	ommonly referred to	as the 10 V's, and	10	CO2	K4	
				a management and s					
4. a.	A large warehouse	. On average, the	10	CO3	K4				
	warehouse experier	nces 15 shippii	ng delays	per day due to vario	us reasons such as				
	inventory issues, tr	ransportation o	delays, or	other unforeseen c	ircumstances. The				
	warehouse manager	r wants to pred	ict the like	elihood of certain eve	ents related to these				
	shipping delays over	ically interested in							
	the following:								
	•	e exactly 10 delays							
	on a given da	•							
	•	•	the ware	house will experience	e at most 8 delays				
	on a given da	•	_						
	·		at the war	rehouse will experie	ence more than 12				
	delays on a g								
	iv). What is the e	xpected number	er or derag	OR					
b.	Describe the maio	or methods us	ed in tin	ne series analysis a	nd compare their	5	CO3	K4	
0.	suitability for differ			•	and compare then	3	003	12.1	
c.							CO3	K4	
	worker will be abse								
	not to affect the pro								
	any given day as lo	bsent on that day.							
	What is the proba								
	absent next Wednes	sday?							
5. a.	a. Outline the key steps involved in developing a scalable and secure data architecture						CO4	K3	
	for an enterprise-level system.								
b.	Develop a detailed	5	CO4	K3					
				OR					
c.	Briefly explain abo		10	CO4	K2				
6. a.	•							K2	
1	influences comprehension and insight. b. Analyse the criteria used to select suitable visual encodings for different types of 5 CO5 K4								
b.	b. Analyse the criteria used to select suitable visual encodings for different types of data and communication goals							K4	
	data and communic	cation goals		OR					
C	c. You are given the following dataset of employee sales performance at TechNova							K4	
c.	Retail Ltd. Use Excel to perform the tasks that follow.							117	
	Employee Name Department Region Monthly Sales (₹) Sales Target (₹)								
	Anita Verma	50,000							
	D -11 M -1	Electronics	North	45,000	55,000				

Employee Name	Department	Region	Monthly Sales (₹)	Sales Target (₹)
Anita Verma	Electronics	North	45,000	50,000
Rahul Mehra	Furniture	West	60,000	55,000
Sneha Kapoor	Electronics	North	52,000	50,000
Manish Rao	Clothing	South	40,000	42,000
Rina Sharma	Electronics	East	48,000	47,000
Karan Patel	Electronics	North	39,000	45,000

- i). Sort the data in descending order based on Monthly Sales.
- ii). Apply a filter to show only employees from the "Electronics" department working in the "North" region.
- iii). Use conditional formatting to highlight the Monthly Sales values less than the Sales Target in red fill.
- iv). Add a new column titled "Performance Status", and insert a formula that shows:
 - "Achieved" if Monthly Sales ≥ Sales Target
 - "Not Achieved" if Monthly Sales < Sales Target

End of Paper