

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BBA DEGREE EXAMINATION MAY 2025
(Fourth Semester)

Branch – BUSINESS ADMINISTRATION (INFORMATION SYSTEM)

DATA MINING AND BUSINESS INTELLIGENCE

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	What is the smallest unit of a digital image called? a) Voxel b) Pixel c) Bit d) Node	K1	CO1
	2	What is the primary purpose of a data warehouse? a) To store operational data b) To enable data mining c) To process real-time transactions d) To serve as a backup for databases	K2	CO2
2	3	Which of the following techniques is used for contrast enhancement in images? a) Histogram Equalization b) Edge Detection c) Image Segmentation d) Morphological Filtering	K1	CO3
	4	Which of the following is an example of data transformation in data pre-processing? a) Removing missing values b) Aggregating data c) Normalizing data d) Both b and c	K1	CO3
3	5	Which of the following filters is best for removing Gaussian noise from an image? a) Median Filter b) Butterworth Filter c) Gaussian Filter d) Sobel Filter	K1	CO4
	6	What is the goal of association rule mining? a) To find clusters in the data b) To identify relationships between variables c) To predict future trends d) To perform classification	K1	CO4
4	7	Which of the following is a lossy image compression technique? a) Run-Length Encoding b) JPEG c) Huffman Coding d) LZW Compression	K1	CO4
	8	What is the main purpose of Business Intelligence (BI)? a) To perform real-time transactions b) To help in decision-making using data c) To store operational data d) To monitor server health	K1	CO4
5	9	Which method is commonly used for image segmentation? a) Fourier Transform b) K-means Clustering c) Histogram Equalization d) Bilateral Filtering	K1	CO5
	10	Which of the following is important for successful Business Intelligence (BI) implementation? a) Data reduction b) Integration with existing systems c) Strict transaction processing d) Elimination of data warehouses	K1	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the functionalities of data mining with examples.	K2	CO3
	(OR)			
	11.b.	Describe the architecture of a data warehouse with a neat diagram.		CO1
2	12.a.	Explain the steps involved in data cleaning, integration, and transformation with examples. How do these steps contribute to improving the quality of data for mining?	K3	CO2
	(OR)			
	12.b.	Describe different data mining tasks and provide examples of real-world scenarios where each task can be applied.		
3	13.a.	Explain the steps involved in mining single-dimensional Boolean association rules from transactional databases with a relevant example.	K3	CO3
	(OR)			
	13.b.	Describe the process of mining multidimensional association rules from relational databases and data warehouses. Provide examples to illustrate your explanation.		
4	14.a.	Analyze the differences between Transaction Processing and Analytic Processing. Discuss their roles in Business Intelligence.	K4	CO4
	(OR)			
	14.b.	Examine the framework for Business Intelligence and explain how intelligence is created and used in a changing business environment.		
5	15.a.	Analyze the challenges and strategies involved in integrating Business Intelligence systems with enterprise databases and other systems. Illustrate with examples.	K4	CO4
	(OR)			
	15.b.	Evaluate the tools and techniques available for successful Business Intelligence implementation, discussing their effectiveness in managing and analyzing large-scale datasets.		CO5

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Analyze the role of multidimensional models in data warehouse implementation.	K3	CO3
2	17	Analyze the steps in data pre-processing and their impact on effective data mining.	K3	CO2
3	18	Analyze mining single and multidimensional association rules, highlighting challenges and solutions in databases.	K4	CO4
4	19	How does BI governance ensure ethical data use and mitigate risks?	K4	CO4
5	20	Design a novel BI implementation strategy for a struggling company.	K4	CO4