

Faculty of Management Studies

End Semester Examination May 2025

MS5CO29 Introduction to Business Analytics & Data Science

Programme	:	MBA	Branch/Specialisation	:	-
Duration	:	3 hours	Maximum Marks	:	60

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))				Marks	CO	BL
Q1. What does the S.M.A.R.T framework stand for in problem framing?				1	1	1
<input checked="" type="radio"/> Specific, Measurable, Achievable, Realistic, Time-bound <input type="radio"/> Structured, Manageable, Rational, Testable		<input type="radio"/> Simple, Measurable, Accessible, Reliable, Transparent <input checked="" type="radio"/> Strategic, Meaningful, Adaptable, Resourceful, Tactical				
Q2. According to Split-Brain theory, right-brained individuals are more likely to be-				1	1	2
<input type="radio"/> Analytical and logical <input checked="" type="radio"/> Technical and systematic		<input checked="" type="radio"/> Creative and intuitive <input type="radio"/> Rule-based and organized				
Q3. What is the main purpose of using the five Whys technique?				1	2	2
<input type="radio"/> Collecting data <input checked="" type="radio"/> To find the root cause of a problem		<input type="radio"/> Designing reports <input type="radio"/> Documenting assumptions				
Q4. The SPIN framework stands for-				1	2	1
<input checked="" type="radio"/> Situation, Problem, Implication, Need-payoff <input type="radio"/> Scenario, Perception, Innovation, Negotiation		<input type="radio"/> Strategy, Planning, Investigation, Navigation <input type="radio"/> Solution, Process, Insight, Note				
Q5. Which of the following is a pattern of insight?				1	3	1
<input type="radio"/> Emotion <input checked="" type="radio"/> Guesswork		<input checked="" type="radio"/> Comparison <input type="radio"/> Imagination				
Q6. What is the key principle behind the pyramid principle?				1	3	2
<input type="radio"/> Bottom-up data sorting <input checked="" type="radio"/> Top-down communication of key messages		<input type="radio"/> Emotional storytelling <input type="radio"/> Formatting visual reports				
Q7. Which of the following is a numerical data type?				1	4	1
<input type="radio"/> Gender <input checked="" type="radio"/> Age		<input type="radio"/> Category <input type="radio"/> Color				
Q8. What is the purpose of data cleaning?				1	4	2
<input type="radio"/> Encrypting data <input checked="" type="radio"/> Correcting errors and inconsistencies		<input type="radio"/> Expanding data <input type="radio"/> Aggregating columns				
Q9. In supervised learning, models are trained using-				1	5	1
<input type="radio"/> No data <input checked="" type="radio"/> Both input and known output variables		<input type="radio"/> Input variables <input type="radio"/> Historical patterns				

Q10. Which machine learning technique is used for grouping similar data points?

1 5 1

- Classification
- Clustering

- Regression
- Forecasting

Section 2 (Answer all question(s))

Q11. Explain how the S.M.A.R.T framework helps in framing business problems.

Marks CO BL
4 1 2

Rubric	Marks
Two marks for SMART full form and Two marks for framing business problem	4

Q12. (a) Describe the challenges faced in analyzing the hospital discharge process and suggest possible improvements.

6 1 1

Rubric	Marks
Three marks for defining HDP and three marks for suggestion possible improvements	6

(OR)

- (b)** Differentiate between facts and opinions when prioritizing key issues in problem-solving.

Rubric	Marks
Two marks for each difference with prioritizing. Minimum Three point must explain.	6

Section 3 (Answer all question(s))

Marks CO BL
4 2 2

Q13. How do frameworks like five WHYS and SPIN help in identifying business problems?

Rubric	Marks
Two marks for each problem.	4

Q14. (a) Explain the components of the business model canvas with a relevant example.

6 2 1

Rubric	Marks
Three marks for components and three marks for business model canvas example.	6

(OR)

- (b)** Discuss the PESTEL framework. How it can be applied in analyzing external business environments?

Rubric	Marks
Three marks for PESTEL framework and three marks for analyzing external business environment	6

Section 4 (Answer all question(s))

Marks CO BL
4 3 1

Q15. Explain the role of visualization in communicating insights using qualitative data.

Rubric	Marks
Two marks for qualitative data and two marks for role of visualization	4

Q16. (a) Describe how new columns and row summaries can help in data analysis.

6 3 1

Rubric	Marks
three marks for row and column summaries help in data analysis.	6

(OR)

(b) Explain how the pyramid principle can structure your insights effectively.

Rubric	Marks
Two marks for pyramid principle and four marks for insights	6

Section 5 (Answer all question(s))

Marks CO BL

4 4 1

Q17. Describe the different data types used in business analytics.

Rubric	Marks
One marks for each data types	4

Q18. (a) What is Exploratory Data Analysis (EDA)? Describe any two techniques with examples.

6 4 1

Rubric	Marks
Two marks for EDA and Four marks for two techniques.	6

(OR)

(b) Why is data preprocessing important before analysis? Explain briefly.

Rubric	Marks
Three marks for data processing and Three marks for explanation.	6

Section 6 (Answer all question(s))

Marks CO BL

4 5 1

Q19. Differentiate between supervised and unsupervised learning with examples.

Rubric	Marks
Two marks for supervised and two marks for unsupervised learning with example	4

Q20. (a) Explain any two business applications of machine learning.

6 5 2

Rubric	Marks
Three marks for each machine learning application.	6

(OR)

(b) What is feature engineering? Why is it important in ML modeling?

Rubric	Marks
Three marks for feature engineering and three marks for ML modeling.	6
