SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF MANAGEMENT STUDIES

QUESTION BANK

II SEMESTER

BA3267 – BUSINESS ANALYTICS

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UNIT – I – INTRODUCTION				
SYLLABUS: Business Analytics - Terminologies, Process, Importance, Relationship with Organisational Decision Making, BA for Competitive Advantage.				
	PART- A			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Define Business Analytics.	CO1	Level 1	Remembering
2.	Write down the components of Business Analytics	CO1	Level 2	Understanding
3.	What is meant by Data Mining?	CO1	Level 1	Remembering
4.	Summarise the benefits of Business Analytics.	CO1	Level 2	Understanding
5.	Outline the applications of Business Analytics.	CO1	Level 2	Understanding
6.	What is meant by Descriptive Analytics?	CO1	Level 1	Remembering
7.	Compare Descriptive and Predictive Analytics.	CO1	Level 2	Understanding
8.	What is meant by Predictive Analytics?	CO1	Level 1	Remembering
9.	Outline the challenges in Business Analytics.	CO1	Level 2	Understanding
10.	What is meant by Prescriptive Analytics?	CO1	Level 1	Remembering
11.	How does business analytics help to improve operational efficiency?	CO1	Level 1	Remembering
12.	Compare Predictive and Prescriptive Analytics	CO1	Level 2	Understanding
13.	Recall the scope of business analytics.	CO1	Level 1	Remembering
14.	Explain Simulation Optimisation.	CO1	Level 2	Understanding
15.	What is meant by Text Mining?	CO1	Level 1	Remembering
16.	Interpret the application of business analytics in proactive risk management.	CO1	Level 2	Understanding
17.	Showcase the process of business analytics.	CO1	Level 1	Remembering
18.	Demonstrate how business analytics help organisations in understanding their customers?	CO1	Level 2	Understanding
19.	What is meant by competitive advantage?	CO1	Level 1	Remembering
20.	Summarise the ways business analytics can help to achieve competitive advantage.	CO1	Level 2	Understanding
21.	What is meant by Data Visualisation?	CO1	Level 1	Remembering
22.	State the need for data cleansing.	CO1	Level 2	Understanding

23.	How does KPI's help in business analytics?	CO1	Level 1	Remembering
24.	Compare Data Mining and Text Mining.	CO1	Level 2	Understanding

	PART- B			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Develop a detailed outline on the evolution and future of business analytics.	CO1	Level 3	Applying
2.	Discuss in detail the scope of business analytics.	CO1	Level 4	Analysing
3.	Elaborate on the components of business analytics.	CO1	Level 3	Applying
4.	Discuss the various terminologies in business analytics.	CO1	Level 4	Analysing
5.	Examine the types and techniques of business analytics.	CO1	Level 4	Analysing
6.	Identify the importance of business analytics and its applications in modern business.	CO1	Level 3	Applying
7.	Develop a detailed note on the application and challenges associated with business analytics.	CO1	Level 3	Applying
8.	Examine the process of business analytics.	CO1	Level 4	Analysing
9.	Identify how the application of business analytics helps organisations to achieve competitive advantage.	CO1	Level 3	Applying
10.	Examine how organizations can leverage Business Analytics for achieving a competitive advantage.	CO1	Level 4	Analysing
11.	Develop the relationship of business analytics process and organisational decision-making process.	CO1	Level 3	Applying
12.	Analyse the ethical considerations associated with the use of business analytics. How can organizations ensure responsible and ethical practices in the collection and analysis of data for decision-making?	CO1	Level 4	Analysing
13.	Identify the impact of predictive analytics on shaping and enhancing business strategy. Provide examples of industries or companies that have successfully leveraged predictive analytics for strategic decision-making.	CO1	Level 3	Applying
14.	Investigate how business analytics is transforming marketing strategies.	CO1	Level 4	Analysing
15.	Examine the role of Business Analytics in a data-driven decision-making environment.	CO1	Level 4	Analysing

16.	Compare and contrast the effectiveness of traditional decision-making approaches with Business Analytics-based decision-making	CO1	Level 4	Analysing
17.	Identify the challenges faced by organizations when implementing Business Analytics processes.	CO1	Level 3	Applying

UNIT – II – MANAGING RESOURCES FOR BUSINESS ANALYTICS				
SYLLABUS: Managing BA Personnel, Data and Technology. Organisational Structures aligning BA. Managing Information policy, data quality and change in BA.				
	PART- A			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Who is a Business Analyst?	CO2	Level 1	Remembering
2.	Write down the role of a business analyst during the planning phase of a project.	CO2	Level 2	Understanding
3.	Why do organisations employ business analysts?	CO2	Level 1	Remembering
4.	Summarise the responsibilities of the business analyst during the execution phase of a project.	CO2	Level 2	Understanding
5.	Outline the ways of managing business analytics personnel.	CO2	Level 2	Understanding
6.	What are the skills required for a business analytics personnel?	CO2	Level 1	Remembering
7.	List the key responsibilities of business analytics personnel.	CO2	Level 2	Understanding
8.	What is meant by Business Intelligence Analyst?	CO2	Level 1	Remembering
9.	Outline the sources of secondary data.	CO2	Level 2	Understanding
10.	Who are IT Business Analysts?	CO2	Level 1	Remembering
11.	How does text mining differ from web mining?	CO2	Level 1	Remembering
12.	Compare Primary and Secondary Data.	CO2	Level 2	Understanding
13.	Recall the sources of primary data	CO2	Level 1	Remembering
14.	Explain the need for managing information policy.	CO2	Level 2	Understanding
15.	What are the limitations of secondary data?	CO2	Level 1	Remembering
16.	Interpret limitations of primary data.	CO2	Level 2	Understanding
17.	Showcase the sources of secondary data.	CO2	Level 1	Remembering
18.	Demonstrate significance of primary data.	CO2	Level 2	Understanding

19.	What is meant data privacy?	CO2	Level 1	Remembering
20.	Summarise the reasons for the failure of analytics initiatives.	CO2	Level 2	Understanding
21.	Why should organisations focus on data privacy?	CO2	Level 1	Remembering
22.	State the advantages of outsourcing business analytics.	CO2	Level 2	Understanding
23.	How would you ensure data quality?	CO2	Level 1	Remembering
24.	Compare Pure Business Analyst and Functional Business Analyst.	CO2	Level 2	Understanding

	PART- B			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Develop the skill sets required for business analytics personnel.	CO2	Level 3	Applying
2.	Analyse the roles of a business analyst in every stage of a project success.	CO2	Level 4	Analysing
3.	Elaborate on the types of business analytics personnel.	CO2	Level 3	Applying
4.	Assess the critical role of a business analyst towards project success.	CO2	Level 4	Analysing
5.	Discuss how organizations can manage personnel effectively for Business Analytics.	CO2	Level 3	Applying
6.	Elaborate on the classification of data and analyse the various sources of data.	CO2	Level 4	Analysing
7.	Develop the outline on 7 step data modelling process and explain the various stages.	CO2	Level 3	Applying
8.	Assess the role of organisational structures in aligning business analytics goals.	CO2	Level 4	Analysing
9.	Examine the reasons for the failure of business analytics initiatives and suggest measures to overcome such failures.	CO2	Level 4	Analysing
10.	Critically examine the concept of outsourcing business analytics and state its pros and cons.	CO2	Level 4	Analysing
11.	Develop the process involved in measuring the contribution of business analytics towards organisational success.	CO2	Level 3	Applying
12.	Assess the need for data quality and data privacy in managing business analytics initiatives.	CO2	Level 4	Analysing
13.	Examine the role of data and technology in managing business analytics initiatives.	CO2	Level 3	Applying

14.	Information Technology infrastructure and support personnel are critical elemental needs for business analytics operations. Examine the statement.	CO2	Level 4	Analysing
15.	Analyze the importance of managing data quality in the success of Business Analytics.	CO2	Level 4	Analysing
16.	Discuss the role of collaboration across departments in managing Business Analytics effectively.	CO2	Level 3	Applying
17.	Discuss the strategies that organizations can use to overcome resource constraints and maximize the value of their analytics investments.	CO2	Level 3	Applying

UNIT – III – DESCRIPTIVE ANALYTICS

SYLLABUS:

Introduction to Descriptive analytics - Visualising and Exploring Data - Descriptive Statistics - Sampling and Estimation - Probability Distribution for Descriptive Analytics - Analysis of Descriptive analytics.

PART- A

S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Define Descriptive Analytics.	CO3	Level 1	Remembering
2.	List down the properties of mode	CO3	Level 2	Understanding
3.	What are measures of central tendency?	CO3	Level 1	Remembering
4.	Summarise the key objectives of measures of central tendency.	CO3	Level 2	Understanding
5.	Identify the merits of range as a measure of variability	CO3	Level 2	Understanding
6.	Define measures of variation and state its importance.	CO3	Level 1	Remembering
7.	Compare skewness and dispersion.	CO3	Level 2	Understanding
8.	Define the concept of coefficient quartile deviation	CO3	Level 1	Remembering
9.	Outline the mathematical properties of standard deviation.	CO3	Level 2	Understanding
10.	Define standard deviation and list its significance in statistics	CO3	Level 1	Remembering
11.	How is the coefficient of variation used in statistics?	CO3	Level 1	Remembering
12.	Compare and contrast mean and standard deviation.	CO3	Level 2	Understanding
13.	Recall the limitations of using range a measure of dispersion	CO3	Level 1	Remembering
14.	Define the concept of skewness in statistics	CO3	Level 2	Understanding

15.	What is meant by marginal probability?	CO3	Level 1	Remembering
16.	Interpret the key assumptions underlying binomial distribution.	CO3	Level 2	Understanding
17.	List the types of descriptive analytics	CO3	Level 1	Remembering
18.	Outline the benefits of descriptive analytics.	CO3	Level 2	Understanding
19.	Define statistical estimation.	CO3	Level 1	Remembering
20.	Summarize the assumptions of binomial distribution	CO3	Level 2	Understanding
21.	What is meant by arithmetic mean? Give example.	CO3	Level 1	Remembering
22.	State the characteristics of binomial distribution.	CO3	Level 2	Understanding
23.	How do skewness differ from dispersion?	CO3	Level 1	Remembering
24.	Compare probability and non - probability sampling.	CO3	Level 2	Understanding

	PART- B			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Analyze the main functions of descriptive analytics and state its advantages and disadvantages	CO3	Level 3	Applying
2.	Discuss the different methods of computing dispersion with its merits in detail.	CO3	Level 4	Analysing
3.	Elaborate the methods of calculating standard deviation.	CO3	Level 3	Applying
4.	Discuss the importance of dispersion in detail.	CO3	Level 4	Analysing
5.	Analyse the differences among the mean, median and mode and explain its advantages and disadvantages.	CO3	Level 4	Analysing
6.	Elaborately explain the positive and negative skewness and the tests of skewness.	CO3	Level 4	Analysing
7.	Identify the uses of probability in business decision making.	CO3	Level 3	Applying
8.	How does a binomial distribution tend to become a normal and Poisson distribution?	CO3	Level 4	Analysing
9.	Examine the features of binomial distributions. When does a binomial distribution tend towards a Poisson distribution.	CO3	Level 4	Analysing
10.	Explain the characteristics of sample and sampling process and its advantages in detail.	CO3	Level 4	Analysing
11.	Elaborate the concept of standard deviation and its calculation.	CO3	Level 3	Applying

12.	Discuss the simple random and systematic, stratified random sampling.	CO3	Level 4	Analysing
13.	Illustrate the calculation of mean according to step deviation method under individual, discrete and continuous series.	CO3	Level 3	Applying
14.	Discuss the ”Addition” and “Multiplication” theorems of probability.	CO3	Level 4	Analysing
15.	Develop a comparative model on Karl Pearson and Bowley’s measures of skewness.	CO3	Level 3	Applying
16.	Examine the absolute and relative measures of dispersion.	CO3	Level 4	Analysing
17.	Elaborate the properties of normal distribution curve.	CO3	Level 3	Applying

UNIT – IV – PREDICTIVE ANALYTICS

SYLLABUS:

Introduction to Predictive analytics - Logic and Data Driven Models - Predictive Analysis Modeling and procedure - Data Mining for Predictive analytics. Analysis of Predictive analytics

PART- A

S.NO	QUESTIONS	CO LEVEL	BT LEVEL	COMPETENCE
1.	Define predictive analytics.	CO 4	Level 1	Remembering
2.	Write down the advantages of predictive analytics.	CO 4	Level 2	Understanding
3.	What is meant by data mining?	CO 4	Level 1	Remembering
4.	Summarise the objectives of predictive analytics.	CO 4	Level 2	Understanding
5.	Outline the models of predictive analytics.	CO 4	Level 2	Understanding
6.	What is meant by data driven model?	CO 4	Level 1	Remembering
7.	Compare the different models of predictive analytics.	CO 4	Level 2	Understanding
8.	What are the uses of cause-and-effect diagram used in predictive analytics?	CO 4	Level 1	Remembering
9.	Outline the principles of predictive analytics.	CO 4	Level 2	Understanding
10.	What are the challenges of data mining?	CO 4	Level 1	Remembering
11.	Define Neural networks.	CO 4	Level 1	Remembering
12.	Compare retail pricing markdown’s model and Modelling relationships and trends in data.	CO 4	Level 2	Understanding
13.	Recall the limitations of descriptive analytics.	CO 4	Level 1	Remembering
14.	Explain the process of predictive analytics.	CO 4	Level 2	Understanding

15.	What are the advantages of data mining?	CO 4	Level 1	Remembering
16.	Interpret time series model of predictive analytics.	CO 4	Level 2	Understanding
17.	Recall the analysis of predictive analytics.	CO 4	Level 1	Remembering
18.	List the methodologies of data mining.	CO 4	Level 2	Understanding
19.	What are the components of data mining?	CO 4	Level 1	Remembering
20.	Summarise the data driven model of predictive analytics.	CO 4	Level 2	Understanding
21.	What is meant by Regression Analysis?	CO 4	Level 1	Remembering
22.	State the objectives of Regression Analysis.	CO 4	Level 2	Understanding
23.	How does predictive analytics is used in different fields?	CO 4	Level 1	Remembering
24.	Compare backward stepwise regression and forward stepwise regression.	CO 4	Level 2	Understanding

	PART- B			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Explain the steps in predictive analytics in detail.	CO 4	Level 3	Applying
2.	Discuss the advantages and applications of predictive analytics.	CO 4	Level 4	Analysing
3.	Illustrate the data driven predictive models in detail.	CO 4	Level 3	Applying
4.	Appraise the different types of predictive analytics model with suitable illustrations.	CO 4	Level 4	Analysing
5.	Analyse the principles of predictive analytics model.	CO 4	Level 4	Analysing
6.	Elaborately explain the process of data mining with its components.	CO 4	Level 4	Analysing
7.	Identify the applications, advantages and challenges of data mining in detail.	CO 4	Level 3	Applying
8.	Infer the various terminologies used in Predictive Analytics and its importance.	CO 4	Level 4	Analysing
9.	Examine the “Analysis of Predictive Analytics” with suitable illustrations.	CO 4	Level 4	Analysing
10.	Explain Clustering model of Predictive analytics.	CO 4	Level 4	Analysing
11.	Elaborate the methodologies of data mining in detail.	CO 4	Level 3	Applying

12.	Discuss the need and importance of data mining in predictive analytics.	CO 4	Level 4	Analysing
13.	Explain Regression Analysis and its application in detail.	CO 4	Level 3	Applying
14.	Appraise the different types of data driven predictive models with appropriate illustrations.	CO 4	Level 4	Analysing
15.	Compare and contrast Logic driven predictive models and data driven predictive models.	CO 4	Level 3	Applying
16.	Examine the challenges in data mining with appropriate examples.	CO 4	Level 4	Analysing
17.	Interpret the concept of predictive analytics in business.	CO 4	Level 3	Applying

UNIT – V – PRESCRITIVE ANALYTICS

SYLLABUS:

Introduction to Prescriptive analytics - Prescriptive Modeling - Non-Linear Optimisation - Demonstrating Business Performance Improvement.

PART- A

S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Define Prescriptive Analytics.	CO 5	Level 1	Remembering
2.	Write down the applications of prescriptive analytics.	CO 5	Level 2	Understanding
3.	What is meant by simulation optimisation.	CO 5	Level 1	Remembering
4.	Summarise the benefits of prescriptive analytics.	CO 5	Level 2	Understanding
5.	Outline the types of prescriptive modelling.	CO 5	Level 2	Understanding
6.	What is meant by Decision Tree Analysis.	CO 5	Level 1	Remembering
7.	Compare Predictive Vs Prescriptive Analytics.	CO 5	Level 2	Understanding
8.	What is meant by Prescriptive Modeling?	CO 5	Level 1	Remembering
9.	Outline the advantages of prescriptive modelling for customers.	CO 5	Level 2	Understanding
10.	What is meant by Linear Programming?	CO 5	Level 1	Remembering
11.	How does optimisation help to solve business problems?	CO 5	Level 1	Remembering
12.	Compare Linear and Integer Programming.	CO 5	Level 2	Understanding
13.	Recall the pros and cons of prescriptive analytics.	CO 5	Level 1	Remembering
14.	Explain Simulation.	CO 5	Level 2	Understanding

15.	What are the pros and cons of heuristics based prescriptive analytics?	CO 5	Level 1	Remembering
16.	Interpret application of simulation modelling.	CO 5	Level 2	Understanding
17.	Showcase challenges in prescriptive modelling.	CO 5	Level 1	Remembering
18.	Demonstrate the applications of prescriptive analytics in manufacturing sector.	CO 5	Level 2	Understanding
19.	What is meant by Business Performance Improvement?	CO 5	Level 1	Remembering
20.	Summarise the benefits of Business Performance Improvement.	CO 5	Level 2	Understanding
21.	What is meant by Optimisation Modeling	CO 5	Level 1	Remembering
22.	State the applications of optimisation modelling.	CO 5	Level 2	Understanding
23.	How does Prescriptive Analytics help in Healthcare Industry?	CO 5	Level 1	Remembering
24.	Compare Simulation Optimisation and Decision Tree Analysis.	CO 5	Level 2	Understanding

	PART- B			
S.NO	**QUESTIONS**	**CO LEVEL**	**BT LEVEL**	**COMPETENCE**
1.	Elaborate on prescriptive analytics and explain the benefits of prescriptive analytics.	CO 5	Level 3	Applying
2.	Discuss the types of prescriptive modelling and explain its pros and cons.	CO 5	Level 4	Analysing
3.	Elaborate the Non-Linear Optimisation. Discuss the applicability of optimisation techniques in prescriptive modelling.	CO 5	Level 3	Applying
4.	Discuss linear optimisation and the various models.	CO 5	Level 4	Analysing
5.	Critically analyse types of constraints in optimisation models.	CO 5	Level 4	Analysing
6.	Elaborate on the listing of prescriptive analytic methods.	CO 5	Level 4	Analysing
7.	Identify the differences between Linear and Non-Linear optimisation.	CO 5	Level 3	Applying
8.	Analyse the concept of prescriptive analytics and its role in decision-making processes within organizations.	CO 5	Level 4	Analysing
9.	Examine the benefits and limitations of prescriptive analytics in decision-making processes.	CO 5	Level 4	Analysing

10.	Analyze the potential impact of prescriptive analytics on organizational performance, competitiveness, and strategic decision-making.	CO 5	Level 4	Analysing
11.	Elaborate the key components and methodologies used in prescriptive analytics.	CO 5	Level 3	Applying
12.	Discuss how organizations can leverage prescriptive analytics to gain a competitive advantage and drive innovation in their respective industries.	CO 5	Level 4	Analysing
13.	Illustrate how organizations can balance the recommendations generated by prescriptive analytics models with human expertise and intuition to make informed decisions.	CO 5	Level 3	Applying
14.	Assess the role of data quality, data integration, and data governance in supporting effective prescriptive analytics initiatives.	CO 5	Level 4	Analysing
15.	Compare and contrast different software tools and platforms used for prescriptive analytics, such as optimization software, simulation software, and decision support systems. Evaluate the strengths and weaknesses of each type of tool in supporting prescriptive analytics capabilities.	CO 5	Level 4	Analysing
16.	Discuss the challenges and considerations that organizations may encounter during the implementation process of prescriptive analytics and provide strategies for overcoming these challenges.	CO 5	Level 4	Analysing
17.	Explain how prescriptive analytics can be used to optimize business operations and improve performance in various industries, such as healthcare, finance, retail, and manufacturing. Provide specific examples of prescriptive analytics applications in each industry.	CO 5	Level 3	Applying