



B.E DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Seventh Semester

COMMON TO ALL BRANCHES

U18MAR0205: Data Science Tools

COURSE OUTCOMES

CO1: Dashboard Creation

CO2: Tool Exploration and working

Time: Three Hours

Maximum Marks: 100

Answer all the Questions: -

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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| 1. Write a short description about the impact of dashboards in decision-making businesses. | CO1 | [K ₂] |
| 2. Compare Excel and SPSS in terms of their utility in data analysis. | CO1 | [K ₂] |
| 3. Illustrate the role of Python in creating analytical dashboards. | CO1 | [K ₂] |
| 4. Describe the role that Tableau play in financial analytics. | CO1 | [K ₂] |
| 5. List the use of Grafana in creating dashboards. | CO1 | [K ₂] |
| 6. Differentiate between diagnostic and predictive analytics tools. | CO2 | [K ₂] |
| 7. Write the challenges in healthcare data analysis using diagnostic tools. | CO2 | [K ₂] |
| 8. List out the process steps of data analysis using Pivot Tables. | CO2 | [K ₂] |
| 9. Write a short note on choosing data science tools (Tableau /PowerBI) for product manufacturing analytics? | CO2 | [K ₃] |
| 10. How the data visualization can be enhanced with combined usage of Tableau and PowerBI tool? | CO2 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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| 11. a) Write a clear explanation about the effectiveness of Tableau and PowerBI for dashboard creation. | 8 | CO1 | [K ₂] |
| b) Explain the components of a well-structured dashboard. | 8 | CO1 | [K ₂] |
| 12. Design a dashboard layout that includes visualizations best suited for tracking sales trends and regional performance. Justify your choice of visual elements | 16 | CO1 | [K ₃] |

(e.g., bar charts, heatmaps) and describe how they will help management identify key insights. The scenario is as follows

“You are asked with creating a dashboard for a retail company to track sales performance across multiple regions and product categories. The company wants the dashboard to highlight trends, regional performance, and areas for improvement.” Discuss the benefits and limitations of using an interactive dashboard versus a static one for the above-mentioned scenario.

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| 13. | a) | An educational institution needs a dashboard to track students' academic performance, attendance, and engagement. The dashboard will be used by both teachers and administrators to identify students needing extra support and to evaluate overall class performance. Discuss which metrics and visualizations would be most effective in helping teachers and administrators identify at-risk students. Justify the choice of these metrics based on their relevance to student support and performance improvement. | 10 | CO1 | [K ₃] |
| | b) | Illustrate how feedback trends can be effectively visualized to enable quick identification of common students concerns. Propose specific types of graphs or charts and explain their suitability for this purpose. | 6 | CO1 | [K ₃] |
| 14. | a) | Summarize the impact of using predictive analytics that improve stock market predictions. Illustrate with examples. | 8 | CO2 | [K ₂] |
| | b) | Compare predictive analytics tools such as RapidMiner and Google Analytics in terms of their effectiveness for forecasting trends in financial data | 8 | CO2 | [K ₂] |
| 15. | a) | A company wants to streamline its data analysis processes using SPSS and Python for descriptive analytics. Synthesize a workflow that combines these tools effectively. Illustrate the role of each tool in this workflow and their contribution to improve data analysis accuracy. | 10 | CO2 | [K ₃] |
| | b) | Describe the usage of RapidMiner in different types of analytics. | 6 | CO2 | [K ₂] |
| 16. | a) | Describe the impact of diagnostic and predictive analytics tools (e.g., Apache Spark and KNIME) in a case study on stock market predictions. Compare their functionalities and synthesize a strategy for integrating these tools to enhance data insights for accurate stock market forecasting. | 10 | CO2 | [K ₃] |
| | b) | Discuss the application of TIBCO Spotfire in complex data analytics scenarios. | 6 | CO2 | [K ₂] |
