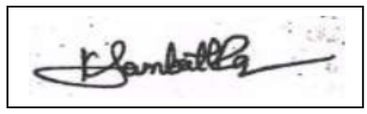

Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025
IV Semester

Class : II PG **Time: 3 Hours**
Major : MBA/MBA-Information Technology **Max. Marks: 100**

23MBAC30S/23MBMC30S Specialisation - II.P.IV - Data Science for Business

Course Outcomes:

CO1: Exhibit knowledge on big data analytics with statistical analysis.
CO2: Demonstrate the ability to think c ed on data analytics.
CO3: Apply a broad range of methods s and use these for data management, analysis, and problem-solving.
CO4: Translate data into clear, actionable insights using R programming.
CO5: Equip for implementation/modification of methods involved in data science and demonstrate business analytics applications that facilitate the effective presentation of analysis results.

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Data science is the process of diverse set of data through? CO1K1
   a. Organizing data b. Processing data c. Analyzing data d. All the above

2. The modern conception of data science as an in dependent discipline is sometimes attributed to? CO1K1
   a. William S. b. John McCarthy c. Arthur Samuel d. Satoshi Nakamoto

3. Which of the following language is used in Data science? CO2K1
   a. C b. C++ c. R d. Ruby

4. Which of the following is false? CO2K1
   a. Sub setting can be used to select and exclude variables and observations
   b. Raw data should be processed only one time.
   c. Merging concerns combining datasets on the same observations to produce a result with more variables
   d. None of the above

5. Which of the following is not a part of data science process? CO3K1
   a. Discovery b. Model Planning
   c. Communication Building d. Operationalize

6. Which of the following are the Data Sources in data science? CO3K1
   a. Structured b. Un Structured c. Both a and b d. None of the above

7. Which of the following is not a application for data science? CO4K1
   a. Recommendation Systems b. Image & Speech Recognition
   c. Online Price Comparison d. Privacy Checker

8. Which of the following focuses on the discovery of (previously) unknown properties on the data? CO4K1
   a. Data mining b. Big Data c. Data wrangling d. Machine Learning

9. Which of the following is example of vision control system? CO5K1

a. Git b. Numpy c. Scipy d. Slidify

10. Which of the following is another name for raw data? CO5K1

a. Destination data b. Egg data c. Secondary d. Machine Learning

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11. a. Explain in detail how data science be leveraged to drive business strategy and decision-making? CO1K4

(or)

11. b. Describe the challenges businesses face when trying to integrate data science into their overall business strategy? CO1K4

12. a. Explain how the business leaders and data scientists effectively collaborate to align business goals with data-driven insights. CO2K3

(or)

12. b. Discuss examples of successful businesses that have transformed their strategy through data science. CO2K3

13. a. Explain the primary sources of data that businesses use for data science projects. CO3K4

(or)

13.b. Discuss how the businesses ensure the quality and accuracy of the data collected from various sources. CO3K4

14. a. Explain in details how data from IoT (Internet of Things) devices impact business strategies and decision-making processes. CO4K4

(or)

14. b. Explain what constitutes big data, and how do businesses handle large volumes, high velocity, and diverse types of data. CO4K4

15. a. Explain the tools and techniques used to manage and process big data for actionable insights. CO5K4

(or)

15. b. Explain how the businesses store and secure big data while ensuring compliance with data privacy regulations like GDPR. CO5K4

Part C **5 x 12 = 60**

Answer ALL questions

Question No 20. Case is Compulsory

Each answer should not exceed 800 words or four pages

16. a. Describe the key differences between descriptive, diagnostic, predictive, and prescriptive data analysis. CO1K4

(or)

16. b. Explain how the businesses use data analysis to identify trends, forecast demand, and optimize supply chains? CO1K5

17. a Describe the most commonly used machine learning algorithms in business, and how do they improve operational efficiency? CO2K4

(or)

17.b. Explain how to determine which machine learning algorithm is most appropriate for a specific business problem or dataset? CO2K4

18. a. Illustrate the challenges businesses face in deploying machine learning models at scale in production environments CO3K4

(or)

18. b. Explain the essential Python libraries used for data science, and how do they facilitate the analysis process? CO3K3

19. a. How do you optimize Python code for large datasets, especially in memory-constrained environment setup? CO4K4

(or)

19. b. Explain some critical Python concepts and data structures (e.g., lists, tuples, and dictionaries) every data scientist should be familiar with. CO4K4

20. Case Study: Company Background: CO5K4

TechCorp is a mid-sized technology company that specializes in developing software solutions for e-commerce businesses. Despite having a strong product, TechCorp has been facing challenges in increasing its market share and improving customer retention. The company has access to a large amount of data generated through user interactions with their software, as well as sales, customer feedback, and marketing campaigns.

TechCorp's leadership team is considering using data science techniques to refine their business strategy, optimize marketing efforts, and improve customer engagement. They've hired a new Chief Data Scientist to spearhead this transformation.

Questions:

1. What tools & techniques do you suggest for TechCorp? Justify.
2. What would be the roadmap for chief Data Scientist in short term, medium term & long term to improve market share to retain customer?

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