MCQ for Data Science Users

Prepare for success with 5000+ data science multiple-choice questions

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Dedicated to

Our family members who have supported us in all respects of life and career.
Our journey proved to be a boon by following their words and experiences.

About the Authors

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Finally, we would like to thank all the readers who have taken an interest in our book and for their support in making it a reality. Your encouragement has been invaluable.

Preface

Bringing the book **"MCQ for Data Science Users"** gives us immense pleasure. This book applied mastering key concepts and techniques in data analysis and machine learning through targeted multiple-choice questions. Dive deep into data manipulation, algorithms, visualization, and evaluation methods, honing your skills for success in the world of data science. This book contains more than 5000 MCQ questions and answer keys.

These questions and answers serve as a means to assess your proficiency in Data Science. If you possess prior knowledge of Data, you can utilize it to ascertain the number of queries you can independently try without assistance. Before your job interview, it would be advisable to review these questions. For teachers or tutors instructing Python, these multiple-choice questions (MCQ) serve as a valuable assessment tool to gauge the extent to which pupils have grasped the material given. The intended difficulty level of the questions is aimed at those who are at the Beginner Level in Data Science, either those who are just beginning to study Data Analysis or those who have recently acquired knowledge in Data . The book also provides answers to all the questions.

This book is for everyone from an engineering and science background. It is also for B.Tech. B.E., BCA, BSc, M.Tech, PGDCA, M.E., MCA, M.Com., MSc, Ph.D., other UG graduates, and PG graduates. With this book, you will gain the knowledge and skills in Python. We hope you will find this book informative and helpful.Parte superior do formulárioParte inferior do formulário

The book is divided into 20 chapters covering MCQs of all aspects of Problem-Solving with Data Science with a touch of Data Structure, DBMS and Machine Learning. The details are listed below.

Chapter 1: Fundamentals of Data Science and Data Analytics - This chapter contains MCQ related to the basics fundamentals of data science and data analytics encompass several key concepts and techniques essential for understanding and working effectively with data.

Chapter 2: Data Science Tools and Applications - It presents MCQ for variety of tools and applications to collect, process, analyze, and visualize data. Here are some of the key tools and their applications in the data science field

Chapter 3: Fundamentals of Programming - This chapter contains MCQ for fundamentals of programming lay the groundwork for understanding how to write code, solve problems, and create software applications. Here are the key concepts in programming fundamentals:

Chapter 4: Introduction to Python Programming - This chapter cover various MCQ's on Python Programming Language. It's popular in various domains such as web development, data analysis, artificial intelligence, scientific computing, and automation.

Chapter 5: Data Analysis: Numpy and Pandas Library - MCQ on NumPy and pandas. This is a powerful libraries in Python used extensively for data analysis, manipulation, and computation.

Chapter 6: Data Visualization: Matplotlib and Seaborn Library - It focus MCQ's on fundamental talent in the ever-evolving realm of data science and analysis is the capacity to visually depict information. This chapter provides an all- encompassing introduction to mastering data visualization with the assistance of the robust applications Matplotlib and Seaborn.

Chapter 7: Data Structures and Algorithms - It presents MCQ for fundamental principles, techniques, and practical uses that form the foundation of effective data structuring and algorithmic problem-solving. Readers will explore the significance of choosing suitable data structures for efficient storage and manipulation of information, as well as acquiring expertise in algorithmic strategies for solving computational issues.

Chapter 8: Database Management and Warehousing - This chapter contains MCQ that explores the fundamental ideas of database management, highlighting the vital part it plays in managing and retrieving data effectively. In addition, it presents the idea of data warehousing and emphasizes how important it is for gathering and organizing massive amounts of data in order to do analyses.

Chapter 9: Data Acquisition, Data Mining and Big Data - This provide MCQ on data acquisition methods, including manual data entry, sensors, APIs, web scraping, and IoT devices. Overview of data mining tasks: classification, clustering, regression, association rule mining, and anomaly detection.

Chapter 10: Data Pre-processing and Feature Engineering - It present MCQ on data transformation, highlighting the criticality of thorough pre-processing and feature engineering. Beginning with the fundamentals, including how to handle missing values and outliers and the skill of developing insightful features, aspiring data devotees will acquire the foundational knowledge

Chapter 11: Probability and Statistics - It focus on MCQ for fundamental probability theory to crucial statistical techniques. Students are required to showcase their comprehension of fundamental ideas such probability distributions, statistical reasoning, hypothesis testing, and descriptive statistics.

Chapter 12: Linear Algebra - This chapter contains MCQ which provides an introduction to linear algebra by presenting a sequence of multiple- choice questions that aid in the comprehension of the material. Assemblies of eigenvalues, linear transformations, vectors, and matrices comprise the fundamental concepts that form the basis of numerous branches of engineering, science, and mathematics.

Chapter 13: Calculus and Optimization - This chapter contains MCQ which provides an introduction to the mathematical ideas that form the basis of several disciplines, including economics and engineering. Readers will learn about the fundamental concepts of calculus, such as derivatives, integrals, and differential equations, as well as optimization strategies like gradient descent and restricted optimization, through a sequence of multiple- choice questions.

Chapter 14: Artificial Intelligence - This chapter contains MCQ on an artificial intelligence (AI) and its significance in modern technology. It also includes AI subfields such as machine learning, natural language processing, computer vision, robotics, and expert systems.

Chapter 15: Machine Learning - It focus MCQ on learners and practitioners with a way to explore complex machine learning ideas using a set of carefully designed multiple-choice questions. Each chapter explores the fundamental methods and latest developments in machine learning, covering essential ideas and practical applications.

Chapter 16: Deep Learning - This chapter contains MCQ which provides a thorough introduction, explaining the complexities of Deep Learning for beginners and experienced professionals. Deep Learning, modeled after the human brain, enables robots to learn detailed patterns and solve challenging problems.

Chapter 17: Pattern Recognition and Knowledge Representation - This chapter contains MCQ which provides basic overview of key ideas in artificial intelligence. The basic ideas behind finding patterns in data and expressing knowledge for computational systems are covered in detail in this chapter. The

primary approaches used in pattern recognition are introduced to readers, with a focus on deriving valuable insights from intricate datasets. The importance of knowledge representation in helping robots comprehend and process information efficiently is also covered in this chapter.

Chapter 18: Natural Language Processing and Text Analytics - This chapter contains MCQ which provides an introduction to the intriguing convergence of computational analysis and human language. Natural Language Processing (NLP) enables automata to understand and provide responses in natural language, whereas Text Analytics analyses unstructured textual data to extract significant insights. By means of a sequence of multiple-choice inquiries, the objective of this chapter is twofold: to furnish readers with an introduction to the fundamental principles of NLP and Text Analytics,

Chapter 19: Web Analytics and mining - The MCQ focus on measurement, analysis, and reporting of web data in order to optimize web usage and enhance the user experience constitutes web analytics. Conversely, web mining emphasizes the extraction of knowledge, patterns, and trends from web data via machine learning and data mining techniques.

Chapter 20: Computer Vision - This chapter includes various MCQs on Computer vision. This is an essential component of data science in the age of big data, when the ability to extract meaningful insights from visual information is of the utmost importance. The fundamental principles, techniques, and applications of computer vision are introduced to the reader in this chapter via a series of multiple-choice questions. The chapter adeptly guides readers through fundamental concepts such as feature extraction and image recognition, object detection, and image segmentation, thereby facilitating their comprehension of computer vision within the framework of data science.

Errata

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Chapter 1
Fundamental of Data Science and Data Analytics

Introduction

The incorporation of **Multiple-Choice Questions (MCQ)** into the domains of data science and Data Analytics provides an entry point into the complex and swiftly developing science of extracting insights from data. Within this evaluation framework, students explore the foundational principles that serve as the basis for both data science and data analytics. The purpose of these MCQs is to assess the answers to fundamental questions regarding statistical analysis, machine learning, and data visualization. They are crucial elements in the process of converting unprocessed data into practical insights. In addition, the inquiries include practical implementations, with a particular focus on the capacity to manipulate and analyze data through the utilization of pertinent programming languages and tools. With the increasing need for proficient individuals to make decisions based on data, these MCQs are of paramount importance in providing students with the understanding and abilities to resolve challenges that arise in the ever-evolving realm of data science and analytics.

Objectives

The primary purpose of this chapter is to provide readers with the knowledge and skills necessary to navigate the extensive terrain of data-driven insights. By means of an extensive assortment of multiple-choice inquiries, it furnishes its readers with a robust grounding in the fundamental concepts and approaches of data science and analytics. In addition to promoting theoretical understanding, the inquiries are designed to stimulate practical implementation, enabling readers to confront typical challenges that may arise in initiatives associated with data. The comprehensive coverage ensures a holistic comprehension of the field by encompassing critical areas such as data preprocessing, statistical analysis, machine learning, and visualization. This chapter is intended to function as a self-assessment instrument, assisting readers in the evaluation of their own proficiency levels and the identification of areas that require refinement. Whether you are a novice in the field seeking fundamental understanding or an experienced professional seeking to enhance their skills, this MCQ chapter serves as a flexible resource tailored to accommodate a wide range of learning requirements within the ever-evolving domain of data science and analytics.

Multiple choice questions

1. **Data science is the collective approach to process different data by _____.**
   - **a.** Organizing data
   - **b.** Processing data
   - **c.** Analyzing data
   - **d.** All of the above

2. **The modern conception of data science was developed by _____.**
   - **a.** William S.
   - **b.** John McCarthy
   - **c.** Arthur Samuel
   - **d.** Satoshi Nakamoto

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

4. **Which of the following language is used to implement data science model?**
   - **a.** Python and R
   - **b.** C++
   - **c.** C
   - **d.** Java

5. **What is data architect?**
   - **a.** Work with businesses to determine the best usage of the information yielded from data.
   - **b.** Build data solutions or model, that are optimized the system performance and design applications.
   - **c.** To meet company's needs, utilize large data sets to gather information.
   - **d.** All of the above

6. **Identity the correct skills of data scientist?**
   - **a.** Probability and statistics
   - **b.** Machine Learning
   - **c.** Data wrangling and pre-processing
   - **d.** All of the above

7. **A user work as data scientist if they have good knowledge of _____.**
   - **a.** Data Wrangling and Pre-processing
   - **b.** Data visualization and model building
   - **c.** Statistics
   - **d.** All of the above

8. **Select one of the correct components for data science:**
   - **a.** Cloud computing
   - **b.** Fog computing
   - **c.** Domain expertise
   - **d.** All of the above

9. **Which of the following concept is not used in data science?**
   - **a.** Advance computing
   - **b.** Data engineering
   - **c.** Domain expertise
   - **d.** Parallel computing

10. **Which of the following is not a part of data science process?**
    - **a.** Data acquisition
    - **b.** Model planning
    - **c.** Communication building
    - **d.** Knowledge representation

11. **Find out the correct sequence of data science life cycle:**
    - **a.** Data acquisition, Data pre-processing, Machine Learning, Pattern recognition, Knowledge representation
    - **b.** Data acquisition, Machine Learning, Data pre-processing, Pattern recognition, Knowledge representation
    - **c.** Machine Learning, Pattern recognition, Data acquisition, Data pre-processing, Knowledge representation
    - **d.** Data acquisition, Data pre-processing, Pattern recognition, Knowledge representation, Machine Learning

12. **Which of the following is not a correct phase of data science life cycle?**
    - **a.** Data acquisition
    - **b.** Data pre-processing
    - **c.** Machine Learning and Knowledge representation
    - **d.** Engineering mathematics

13. Which of the following are the Data Sources in data science?

a. Structured
b. Un-structured
c. Both A and B
d. None of the above

14. _____ is not an application for data science.

a. Recommendation systems
b. Image recognition and image detection
c. Online price comparison and prediction
d. Privacy checker

15. Which of the following is not an application of data science?

a. Verifying a portal login using username and password
b. Verifying voice for authentication
c. Verifying the topic of a text document
d. Verifying the patterns in the weather

16. Which of the following is the valid original source of data in data science?

a. Raw data is original source of data
b. Preprocessed data is original source of data
c. Raw data is the data obtained after processing steps
d. None of the above

17. Which of the following is one of the key data science skills?

a. Statistics
b. Machine Learning
c. Data visualization
d. All of the above

18. Which of the following step is performed by data scientist after acquiring the data?

a. Data cleaning
b. Data integration
c. Data replication
d. All of the above

19. _____ is the process of detecting and correcting (or removing) corrupt or inaccurate records from a record set, table, or database.

a. Data cleaning
b. Data scrubbing
c. Both a and b
d. None of the above

20. _____ is the process of deriving knowledge and insights from a huge and diverse set of data through organizing, processing, and analyzing the data.

a. Data science **c.** Hadoop
b. Big Data **d.** Science

21. _____ is free software for statistical computing and analysis.

a. Python
b. R
c. CPP
d. Both Python and R

22. Which of the following is used in data science?

a. Structure data
b. Unstructured data
c. Both structured and unstructured data
d. None of these

23. Which of the following is valid data sources in data science?

a. Social media **c.** Online servers
b. Data centers **d.** All of the above

24. Phases of data science life cycle is ____

a. Data Acquisition
b. Data Pre-processing
c. ML and pattern Evaluation
d. All the above

25. Which of the following is not a valid phase of data science?

a. Hadoop
b. Data pre-processing
c. Pattern evaluation
d. Knowledge representation