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| **Qno** | **Question** | **Marks** | **Section** |
| 1. 1 | Define Data Science and explain the applications of data science in various sectors. | 8 | Section-I |
| 1. 2 | Define Data Wrangling. Explain its importance and various steps involved in it. | 8 | Section-I |
| 1. 3 | Write about the essential python libraries. | 8 | Section-I |
| 1. 4 | Write about the built in data structures used in python. | 8 | Section-I |
| 1. 5 | a) Explain about List comprehension with example?  b) Explain about Dictionary comprehension with example? | 4  4 | Section-I |
| 1. 7 | What are Functions? Explain about Local and Global Variable? | 8 | Section-I |
| 1. 9 | Explain about importance of data, types of data and sources of data? | 8 | Section-I |
| 1. 10 | a) What are the different types of data quality issues in process of Data wrangling?  b) Explain about Anonymous (lambda) Functions? | 4  4 | Section-I |
| 1. 11 | What is Numpy. What are its main areas of functionalities used for data analysis applications. | 8 | Section-II |
| 1. 12 | a) Write about numpy ndarray.  b) What are the arithmetic operations performed using numpy arrays. Explain with examples. | 4  4 | Section-II |
| 1. 13 | Write about different array creation methods in numpy. Explain with examples. | 8 | Section-II |
| 1. 14 | a) Explain about the basic data structures used in pandas.  b) Write the syntax for creating a Series with list, and a Data Frame with list and dictionary. | 8 | Section-II |
| 1. 15 | What is Pandas? Write about the essential functionalities in pandas? | 8 | Section-II |
| 1. 16 | Explain the following in detail using suitable examples: a) Re indexing b) Dropping entries from an axis. c) Indexing d) Selection e) Filtering | 8 | Section-II |
| 1. 17 | a) What is Data Frame in Pandas? Explain with example  b) What is Series in Pandas? Explain with example. | 4  4 | Section-II |
| 1. 18 | a) What are Different ways of creating Data Frame?  b) What is Python Pandas and what is it used for? | 4  4 | Section-II |
| 1. 20 | Explain About the significant features of Pandas Library? | 8 | Section-II |
|  | a)How do you split a Data Frame according to a Boolean criterion?  b)How can we convert Numpy array into a DataFrame? | 4  4 | Section-III |
| 1. 23 | a)How are iloc and loc different ?Give syntax and examples  b)How to set index to Pandas Data Frame? | 4  4 | Section-III |
| 1. 25 | a) How to add a row to a Pandas Data Frame?  b)how to add a column to a Pandas Data Frame? | 4  4 | Section-III |
| 1. 26 | Explain about web scraping with an example? | 8 | Section-IV |
| 1. 27 | Write about Interacting with web API’s with an example. | 8 | Section-IV |
| 1. 28 | Write about function arguments used for reading csv/excel files. | 8 | Section-III |
| 1. 31 | Explain about Data cleaning and preparation? | 8 | Section-IV |
| 1. 32 | a) How do you handle the Missing data?  b) Explain how do you filter out Missing Data? | 4  4 | Section-IV |
| 1. 33 | Explain about   1. removing duplicates 2. transforming data using a function or mapping | 4  4 | Section-IV |
| 1. 34 | a)Explain about replacing values  b)Explain about renaming index | 4  4 | Section-IV |
| 1. 35 | Write about detecting and filtering outliers? | 8 | Section-IV |
| 1. 37 | Write about regular expression and write the code to retrieve pattern on email address? | 8 | Section-IV |
| 1. 38 | Explain about the different built -in string manipulation methods? | 8 | Section-IV |
| 1. 40 | Explain the different type of joins in pandas with syntax and examples | 8 | Section-V |
| 1. 41 | a) Explain Group-by function in Pandas?  b) What is the use of Pandas Aggregate Function? | 4  4 | Section-V |
| 1. 43 | Explain with example the use of Merge and Concat function? | 8 | Section-V |
| 1. 44 | Explain in detail about finding and treating Null values? | 8 | Section-V |
| 1. 45 | a) What is the use of Pandas Data Frame aggregate () function and explain its syntax and parameters?  b) Explain how Groupby method is used on different columns? | 4  4 | Section-V |
|  | Explain about the Exploratory data Analysis and methods used in EDA? | 8 | Section-V |
| 1. 47 | What is data aggregation? What are the different aggregation functions? Explain with examples | 8 | Section-V |
| 1. 48 | Explain about combining and merging Datasets? Write about different join type? | 8 | Section-V |
| 1. 49 | Explain about Concatenation along Axis? Explain with example about concat function arguments? | 8 | Section-V |
| 1. 50 | What is Hierarchical Indexing? Give examples. Explain about indexing with data frame’s columns? | 8 | Section-V |