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G.H. Raisoni College of Enginering & Management,
Wagholi Pune
F.Y. B.Tech
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Department : IT
Term/Section : I Date of Examination : 01/03/2021
Subject Name/Code : Foundation of Data Analytic (UCOL102)
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CO Questions :

CO2 1.) Explain Data Science in detail.

Answer: Theories and techniques from many fields and disciplines are used to investigate and huge amount of data is used to improve decision making.

Data Science practitioners apply machine learing algorithms to numbers, text, etc to produce AI systems to perform tasks that humans usually do with high intelligence.

Data Science principle apply to all data irrespective if its big or small.

Data Science requires these skills →
Domain Expertise, Hacker Mindset, Visualization, Advanced computing, Statistics, Math and Scientific approach to problems.

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CO1 2.) Define

i) Mean: The mean is the average or the most common value in a collection of numbers. It is also refferd to as an expected value.

$$m = \frac{\text{Sum of the terms}}{\text{no. of terms.}}$$

(ii) Median: The median is the middle number in a sorted, ascending or descending or A statistical measure that determines the middle value of a dataset listed in ascending or descending value.

$$\text{Median}(x) = \begin{cases} x\left[\frac{n}{2}\right] & \text{if } n \text{ is even.} \\ \frac{x\left[\frac{n-1}{2}\right] + x\left[\frac{n+1}{2}\right]}{2} & \text{if } n \text{ is odd.} \end{cases}$$

(iii) Mode: The value that appears most frequently in a data set. A set of data may have one mode, more than one mode.

CO2 : 3.) Explain data analysis in detail

The process of examining datasets to draw conclusions about the information.

Data analytics techniques enable you to take raw data and uncover patterns to extract valuable insights from it

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It consists of cleaning, transformation, modeling and questioning data to find information.

Type of data analysis:

1. Text analysis: This is also refered as Data mining. This method discovers a pattern in large form data sets using databases.
2. Statistical analysis: This mainly involves graphical presentation and modeling of data.
3. Diagnostic Analysis: This tells us the pattern of data.
4. Predictive analysis: This makes predictions upon the future outcomes based on data.

Q.1) 4.) Write short note

(i) Quantitative Data Types:

Quantitative data type can be divided into two types:

Discrete Data: It is a type of data that consists of counting numbers only and such cannot be measured.
like → Weight.

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Continous Data: Continous Data is a datatype that takes numeric values that can be meaningfully broken down into smaller units.
It can be measured.

(ii) Qualitative Data types:

Qualitative data types can be divided into two types.

(a) Nominal Data: Nominal data is a classification of categorical variables, that do not provide any quantitative value.

(b) Ordinal Data: Ordinal data is a type of qualitative data where the variables have natural, ordered categories and distances between the categories are not known.

CO2 5) Describe the application of Data Science.

Answer: The application of data Science are:

Airline Route Planning, Speech Recognition, Internet Search, Healthcare, Fraud and Risk Detection, Web Recommendations.