**Fundamentals of Big Data and Data Analytics**

**April 2022 Examination**

**Q1. On the path towards industrial and social progress Tata Power-DDL has always been a front runner in introducing reformative solutions such as Smart Grid Operations, Automatic**

**Meter Reading, etc. to the power segment in North & North-West Delhi. Among other challenges, revenue leakage and power theft were causing a roadblock in Tata Power-DDL's goal to optimize the power supply for consumers at reduced tariffs.**

**By digitalizing the power distribution systems, Tata Power - DDL opened the doorway to a vast amount of information that was heterogenous and unstructured. With an aim to enhance decision-making and optimize entire utility ecosystem, Tata Power-DDL’s outlook was to employ advanced digital technology like Big Data analytics.**

**Tata Power-DDL partnered with Hitachi Systems Micro Clinic to leverage their IT X OT expertise for social enhancement. Collaborating with Tata Power-DDL, Hitachi designed a holistic blueprint for the implementation of end-to-end advanced data analysis solutions; deploying world-class technologies to streamline data ingestion from diverse platforms, systematize scheduling of data and execute data engineering on big data along with swift advanced analytics.**

**By creating an advanced and reliable system architecture for big data analytics using IT X OT, Hitachi provided Tata Power-DDL with an operational advantage by focusing on:**

**• IT integration objectives**

**• Solution modifications**

**• Speedy execution by using efficient operation technology and result optimization**

**• Power Operation Technology**

# Thus, improving operational efficiency and accelerating the delivery of true value to the society by curbing power losses and reducing tariffs for consumers.

# a. In this case, how Big data analytics will enable prevention of revenue leakage in power sector. Which tools can be leveraged for data ingestion, scheduling as well as final operationalization of analytics?

# b. How is distributed computing different from parallel computing? Use this context to explain the difference.

# c. Which analytics methodologies can be used to analyse the business problems mentioned in the case? Which business metrics will be useful to track the possible fallacy in meter reading? (10 Marks)

# Ans 1.

## Introduction

Tata Power Delhi Distribution confined is a joint merger between the government of Delhi and North Delhi strength. In July, it started to operate in 2002 to serve 7 million in north and northwest Delhi. The company operates in 510 sq. km. Location with a peak load of approx 2074 MW. It is the first to introduce an automatic Metering shape-based on-demand program to manipulate excessive call for and pressure grid. Tata Power DDL has delivered distribution control structures, SAP components, and Outage control technologies. In 2008, Tata strength

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# Q2. State 3 use-cases of business analytics within the banking industry, highlighting usage of descriptive, predictive, and prescriptive analytics. Give an example of how mobile analytics is relevant for the industry and the resultant impact vs. the traditional banking systems. (10 Marks)

# Answer 2.

## Introduction

The descriptive analysis includes processing and figuring out diverse patterns and summarizing data obtained thru reporting. Consumer segmentation is based totally on their spending nature. Likewise, customer offers and discounts are based on segmentation. Information analytics is the backbone for the banking industries and credit score businesses. Statistics analytics has furnished a broader scope for the growth and improvement of banks. It is a full-size component to analyze via search, conduct, and forecasts to assist the banking industries. For economic institutes,

**3.a. Explain how prescriptive analytics has increasingly been adopted along with big data in the companies. You can also mention the relevant stakeholders in the business who are needed to make this a success. (5 Marks)**

**3.b. Mention 2 business examples of prescriptive analytics which are fueled by the Big data and Mobile Analytics revolution with the necessary context and methodology. (5 Marks)**

# Ans 3(A).

## Introduction

Prescriptive evaluation is helpful to understand which expansions are helpful and whether or not it's far worthwhile. It is a discipline thru which corporations could make high-quality selections in the given situation. This analytics is essential because it offers lengthy period economic

**Answer 3(b).**

**Introduction**

A manufacturing industry could draw extra company information. It refers to the ones businesses mounted ultimately. It's miles helpful to do away with vital information to supply the favoured outcomes. It specializes in the proper allocation of resources and increases efficiency to function.