**Decision science**

# April 2022 Examination

# Question 1

**Forecast the value for the year 2016-17.**

|  |  |  |
| --- | --- | --- |
| **YEAR** | **COAL - (MILLION**  **TONES)** | **LIGNITE - (MILLION**  **TONES)** |
| **2010-11** | **532.7** | **37.73** |
| **2011-12** | **539.95** | **42.33** |
| **2012-13** | **556.4** | **46.45** |
| **2013-14** | **565.77** | **44.27** |
| **2014-15** | **609.18** | **48.27** |
| **2015-16** | **639.23** | **43.84** |

## Ans 1.

## Introduction

Exponential smoothing is a long sequence checking method for univariate statistics that may loosen up to assist an orderly example or infrequent element. Notable smoothing is a duration series assessing method for univariate records. Time-series strategies like the (field-Jenkins A.R.I.M.A.) collecting of systems domesticate a version that predicts a weighted direct measure of past due beyond insights or slacks. Extraordinary smoothing figuring out procedures are similar in that an assumption is a weighted measure of beyond announcements. Be that as it can, Its Half solved only

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# Question 2

**Payoff table:**

|  |  |  |
| --- | --- | --- |
|  | **Favourable market** | **Unfavourable market** |
| **Lakshmi private limited** | **55** | **26** |
| **Mehta Group of industries** | **43** | **38** |
| **Surya** | **29** | **43** |
| **LT energy** | **15** | **51** |

**A) Draw the decision tree.**

**B) If we assign the following probabilities to the states of nature, then determine the EMV decision.**

**P(s1) = .4 P(s2) = .1 P(s3) = .3 P(s4) = .2**

## Ans 2.

## Introduction

Expecting the developments in the monetary trade costs is a moving task because of the numerous weaknesses and elements that affect the business area's worth on a specific day. It joins financial conditions, financial sponsor of variables that affect the business community's well worth on a specific day, money-associated situations, economic consumers' viewpoints toward a specific association, political sports. In this manner, stock business regions are best for quick transitions, causing sporadic instabilities inside the stock rate. Financial exchange mixtures

# Question 3(a). The proportion of eligible voters in the next corporation election (in tumkur) who will vote for the incumbent is assumed to be 55%. What is the probability that in a random sample of 500 voters less than 49% say they will vote for the incumbent? Write your conclusion. (5 Marks)

# 3.b. The top-selling Amar tire is rated 70,000 KMs, which means nothing. In fact, the distance the tires can run until they wear out is a normally distributed random variable with a mean of 82,000 KMs and a standard deviation of 6,400 KMs.

# What is the probability that a tire wears out before 70,000 KMs? What is the probability that a tire lasts more than 100,000 KMs?

# Note: You may use Z-table for this.

# Z-table link- Normal Table.xls (5 Marks)

## Ans 3a.

## Introduction

Selecting a top administrative election committee is a challenge most simple associations want to undergo reliably. Ensuring their directorate has been picked, observing their neighborhood laws, and the connection with financial backers remains wonderful using averting examined political choice outcomes are vital duties. The board is obligated to investigate and coordinate company

**Answer 3(B).**

**Introduction**

The regular tire can be visible as a digressed ringer twist tending to the probability scattering of the common imply of an instructive gallimaufry. “it is called Gaussian allocation,” which displays the nearest data to the standard. A well-known scattering curve can be unimodal,