

**K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH,**  
**Vidyavihar, Mumbai- 400077**

**Program: PGDM Executive (Batch2017-18), Sem.-I**  
**Subject: QT in Management**  
**(End Term Examination)**

Maximum Marks: 50  
Dec., 2017

Duration: 3 hours

Date: 6<sup>th</sup>

**Instructions :**

1. All the questions are compulsory

**Question 1**

**15 Marks**

An investor has \$500,000 to invest in the stock market. She is interested in developing a stock portfolio made up of HDFC, Axis and SBI. However, she does not know how much to invest in each one. She wants to maximize her return, but she would also like to minimize the risk. She has computed monthly returns for all four stocks during a 15-months period (Jan. 1990 to Dec. 2005). After some consideration, she narrowed her choices down to the following three. What should she do? (refer excel data )

- a. Equal amount in each stock.
- b. HDFC: \$200,000, Axis: \$100,000 and SBI: 200,000.

**Question 2**

**35 marks**

**Case Study – Pelican Stores –**

**Questions –**

- a) Identify the probability that more than 25 customers will belongs to the promotional? What is the probability less than or 60 customers belongs to the regular customers?

- b) Identify the probability that more than 15 customers will be the males? What is the probability less than or 45 customers will be the females?
- c) Estimate the probability that the average net sales will be more than 55.2? Estimate the probability that the average net sales will be less than 45.6? What is the probability that the average net sales will be in between 15.6 and 77.5?
- d) Estimate the probability that the average age of the customers will be more than 70? Estimate the probability that the average age of the customers will be less than 45? What is the probability that the average age will be in between 22 and 75?
- e) Estimate at 95% confidence level what proportion of the customers are using the American express cards for the payment method and using visa cards for the payment method?
- f) Estimate at 99%, 95% and 90% confidence level what will be the average net sales and average age of the customers of the pelican stores?
- g) Identify the relationship between the net sales and age of the customers?
- h) Identify the impact of age on the net sales of the pelican stores? And, predict the net sales of the company if the age of the customer will be 72 years?

-----End of Paper-----