K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH

Program:PGDM(Exec), VTrim (Batch 2016-2017)
Subject: Strategic Risk Management
(End Term examination)

Maximum Marks: 100
Duration: 3 hours

Date: December 26, 2017

Notes:
Answer ALL questions. Make suitable assumptions if required and state them

Question 1
(20 Marks)

(a) "The risks to which a firm is exposed can be broadly classified into strategic risks, operational risks and financial risks". Explain. (5 marks)

(b) Viva India is an airline company that started domestic operations in the year 2011. International operations commenced from March 2017. The company operates as a full-service carrier. It has flights operating from the major metros of India and has recently embarked upon an ambitious plan of expanding its operations to tier-II cities. Discuss the strategic, operational and financial risks to which the company is exposed. (15 marks)

Question 2 **(20 Marks)**

(a) Enumerate and explain the steps in the process of strategic risk management. (10 marks)

(b) Zenith Realtors Ltd is considering the development of a shopping complex in central Mumbai comprising 50 units. The monthly rent per unit will be fixed at Rs.30,000 for the first year and growth in rent is expected to vary randomly between 8% and -2% p.a. thereafter. The monthly maintenance expenses for the property are estimated at Rs.90,000 for the first year and will grow randomly in the range of 3% and 6% thereafter. The company expects to hold the property for a period of 6 years. A similar property sold recently was valued at an exit capitalization rate of 10% but the company is bullish on the real estate market and expects the capitalization rate at the end of 6 years to be in the range of 5% to 8%. Estimate the cash flows from the project using Monte Carlo simulation and the amount that the company may spend on developing the property within a 95% confidence interval. Use 500 simulations. (10 marks)

Question **3**
(20 Marks)

(a) Explain in what way the use of Monte Carlo simulation technique improves upon traditional deterministic or single-point analysis. (10 marks)

(b) Mr Sharma is planning for his retirement which is due on March 31, 2018. He has

a corpus of Rs.2 crore invested in liquid securities such as equity shares and equity and debt mutual funds. He estimates his living expenses to be around Rs. 12 lakh in the first year after retirement and then grow in pace with inflation which is expected to be 6% p.a. Assume that Mr. Sharma will survive for the next 25 years and the rate of return on his investments will be normally distributed with a mean of 14% and a standard deviation of 20% p.a. What is the probability that Mr. Sharma will run out of funds at the end of 25 years? By how much should he reduce his annual expenditure if he is comfortable with just a 10% chance of running out of money? Use 500 Monte Carlo simulations. (10 marks)

Question   4
(20 Marks)
(a) What do you mean by Value-at-Risk? Explain the three methods commonly used for computing Value-at-Risk.   (10 marks)
(b) The monthly price of crude oil during the past year in terms of dollars per barrel is tabulated below. A refinery expects to hold an average daily inventory of 10,000 barrels of crude during the next year. Price of crude oil is forecast to be around 60 USD per barrel. Compute the daily Value-at-Risk for the refinery's inventory using the Normal Linear VaR method and a confidence level of 95%. Explain   your   answer. (10 marks)

Month	Price in USD
January	38.00
February	39.50
March	37.20
April	40.20
May	42.00
June	44.50
July	48.20
August	52.85
September	54.30
October	55.60
November	58.40
December	61.50

Question   5
(20 Marks)
(a) Explain the concept of hedge ratio in the context of hedging with futures contracts. A company manufacturing batteries uses lead as its major raw material and expects the price of lead to increase sharply over the next year. What position should the company take in lead futures contracts in order to hedge against a price rise in lead? The daily standard deviation of spot and futures lead price is observed to be around 0.4% and 0.42% respectively with a correlation of around

0.92. Determine how many futures contracts will be required to hedge a monthly requirement of 3000 MT.
(10 marks)

(b) Why are real options needed? Explain the different types of real options available to a firm. (10 marks)