K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH

Program:PGDM(Exec), V Trim (Batch 2017-2018)
Subject: Strategic Risk Management
(End Term examination)

Maximum Marks: 50
Duration: 3 hours

Date: December 24, 2018

Notes:
Question 1 is compulsory. Attempt any 3 of the rest. Make suitable assumptions if required and state them.

Question 1
(20 Marks)

(a) A hedge fund has a portfolio of USD 100 million equally invested in S&P 500 stocks and bitcoin. Daily data of prices of S&P 500 and bitcoin for the past six months is given in the excel sheet. Compute daily VaR for the portfolio using the Normal Linear VaR method at 99% confidence level. **(10 marks)**

(b) Differentiate between strategic, operational and financial risks faced by an organization with the help of suitable examples**. (10 Marks)**

Question 2
(10 Marks)

(a) Explain the Historical Simulation method of computing value-at-risk. What are the merits and demerits of this method? (5 marks)

(b) What is a cross hedge? In what situations should a cross hedge be used? TrueJet Ltd hedges its exposure to the price of aviation turbine fuel (ATF) using crude oil futures. If the standard deviation of monthly changes in ATF prices and prices of crude oil futures is USD 0.50 and USD 0.55 and the correlation between the two is 0.96, what should be the hedge ratio? If TrueJet Ltd requires 10,000 gallons of ATF each month, how many futures contracts are needed to hedge the exposure? (5 marks)

Question 3
(10 Marks)

(a) Explain with suitable examples how the use of the technique of Monte Carlo Simulation can improve strategic risk management in the context of an airline company. (5 marks)

(b) Explain the bullish call spread strategy and the situation in which it can be applied. (5 marks)

Question 4
(10 Marks)

ABC Ltd is considering investment in a joint venture that will last for five years.

Revenues from the venture are expected to be Rs.10 crore for the first year. The growth rate of revenues over the five-year period is expected to follow a normal distribution with a mean of 10% and a standard deviation of 3%. Variable costs are estimated at 40% of the annual revenues. Fixed costs are expected to be constant at Rs.2 crore each year. If the required rate of return is 8% p.a. for ABC Ltd, simulate 1000 trials of the computation of the present value of cash flows from the venture using Monte Carlo Simulation. Find out the average present value of cash flows and the present value expected at the 95th and 5th percentile. (10 marks)

Question 5
(10 Marks)

(a) A company which exports automobile parts to the UK expects to receive GBP 50,000 for its shipment after 3 months. The GBPINR spot rate is Rs.90.38 on December 17. How should the company hedge against the currency risk using options? Three-month call options with a strike price of 90.50 are traded at Rs.1.10 and put options with the same strike and maturity are available at 95 paise. Show the pay-off profile at expiry if the GBPINR spot rate on expiry is (i) Rs.82.50 (ii)Rs.85.50 (iii) Rs.92.50 and (iv) Rs.96.50. (5 marks)

(b) Explain the 'straddle' strategy and the situation in which this strategy may be applied. (5 marks)