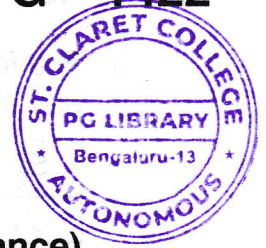




4

PG – 1422



**IV Semester M.B.A. (Day and Eve.) Examination,
December 2024/January 2025
(CBCS) (2022-23 and Onwards)
MANAGEMENT**

Paper – 4.2.3 : Risk Management and Derivatives (Finance)

Time : 3 Hours

Max. Marks : 70

SECTION – A

Answer **any five** of the following. **Each** question carries **five** marks. **(5×5=25)**

1. What is meant by Future Contract ? Differentiate between Forward and Future Contract.
2. What is meant by Swaps and what are the different types of Swaps ?
3. The price of March Nifty Futures contract on a particular day was 9,170. The Minimum trading lot on Nifty Futures is 50. The initial Margin is 8% and maintenance margin is 6%. The index closed at the following levels on next 5 days.

Day	1	2	3	4	5
Settlement Price (Rs.)	9,380	9,520	9,100	8,960	9,140

You required to calculate :

- i) Mark to Market cash flows and daily closing balance on account of an investor who has taken a long position at 9,170.
 - ii) Net Profit or Loss on the contract.
4. You as an investor had purchased a 4-month call option on the equity shares of X Ltd. of Rs. 10 of which the current market price is Rs. 132 and the exercise price is Rs. 150. You expect the price to range between Rs. 120 and Rs. 190.

The expected share price of X Ltd. and the related probability is given below :

Expected Price (Rs.)	120	140	160	180	190
Probability	0.05	0.20	0.50	0.10	0.15

Compute the following :

- i) Expected Share price at the end of 4 months.
- ii) Value of call option at the end of 4 months, if the exercise price prevails.

P.T.O.



5. The following data is available for AB Ltd., a company that is not expected to pay a dividend for a year.

S_0	E	R	T	σ	σ^2
60	56	0.14	0.5	0.3	0.09

What is the value of Call and Put option as per the Black Scholes Model ?

6. A future contract is available on R Ltd., that pays an annual dividend of Rs. 4 and whose stock is currently priced at Rs. 125. Each future contract calls for delivery of 1000 shares to stock in one-year daily marking to market. The corporate treasury bill rate is 7%.

Required :

- Given the above information what should be the price of one future contract ?
 - If a company stock price decreases by 6%, what will be the price of one future contract ?
7. Company ABC and XYZ have been offered the following rates per annum on a \$200 Million five-year Loan.

Company	Fixed rate	Floating rate
ABC	12.0	LIBOR + 0.1%
XYZ	13.4	LIBOR + 0.6%

Company ABC requires a floating rate loan, Company XYZ requires a fixed rate loan. Design a swap that will net a bank acting as intermediary at 0.1% per annum and be equally attractive to both the companies.

SECTION – B

Answer **any three** questions. **Each** question carries **10** marks. **(3×10=30)**

- What is meant by Commodity Market ? Explain the SEBI guidelines for Indian Commodity Market.
- Consider the following data relating to stock ABC Ltd. ABC Ltd., has a beta of 0.7 with NIFTY. Each Nifty contract is equal to 200 units. ABC Ltd., now quotes at Rs. 150 and the NIFTY futures is 1400 index points. You are long on 12000 shares of ABC Ltd., in the spot market.
 - How many futures contracts will you have to take ?



- ii) Suppose the price in the spot market of the stock drops by 10%, how are you protected ?
- iii) Suppose the price in the spot market of the stock jumps by 15%, what happens ?
10. The current spot price of ABC Ltd., is Rs. 121. Call options on ABC Ltd. having the strike price of Rs. 125 and Rs. 130 are trading at a premium of Rs. 3.30 and Rs. 1.80 respectively. Mr. X, a speculator is bullish about the share price over the next 6 months, however he is also of belief that the price could go down. He approaches you for advice. You are required to :
- i) Suggest a strategy that Mr. X can adopt which puts limits on his gain/loss.
- ii) How much is the maximum possible profit ?
- iii) Draw out a rough Pay-off diagram of the strategy adopted.
- iv) What will be the BEP of the share ?
11. An investor has three stocks A, B, C which he holds in the proportion of 0.5, 0.25 and 0.25. Their respective betas are 1.6, 2 and 0.8. Nifty spot is 1700 and futures are in multiples of 50. Assume the value of present portfolio is Rs. 20,00,000. What are the alternate courses of action if the portfolio risk is
- a) should be decreased by 20%.
- b) should be increased by 12%.

SECTION – C

Compulsory Question :

(1×15=15)

12. On April 1, 2023 an investor has a portfolio consisting of eight securities as shown below.

Security	Market Price	No. of Shares	Beta Value
A	29.40	400	0.59
B	318.70	800	1.32
C	660.20	150	0.87
D	5.20	300	0.35
E	281.90	400	1.16
F	275.40	750	1.24
G	514.60	750	1.24
H	170.50	900	0.76



The cost of capital for the Investor is 20% p.a. continuously compounded. The investor fears a fall in the price of the shares in the near future. Accordingly, he approaches you for the advice to protect the interest of his portfolio. You can make the use of the following information. The current nifty value is Rs. 8,500, Nifty futures can be traded in units of 25 only and futures of May are currently quoted at Rs. 8,700 and futures for June is quoted at Rs. 8,850.

You are required to calculate :

- a) The beta of his portfolio.
- b) The theoretical value of the futures contract for contracts expiring in May and June.

(Given $e^{0.03} = 1.03045$ and $e^{0.05} = 1.05127$)

- c) The nifty contracts that he would have to sell if he desires to hedge until June in the following cases.

- i) His total Portfolio.
- ii) 50% of his Portfolio.