

AFM/SFM Test-3

Mission 80+ in AFM/SFM for Nov/Dec 2024 attempt

Time Allowed – 80 minutes

Maximum Marks - 40

All Questions are Compulsory.

Working Notes should form part of the respective answer.

PART I – Case Scenario based MCQs (12 Marks)

In our CA Final AFM paper / CMA Final SFM Paper conducted by Institute, it is not required to show the working for MCQs. However, for our test series, we highly recommend that students provide detailed workings. This allows us to better evaluate your preparation and understanding of the concepts.

Case Scenario I:

CHENNAI PETROLEUM CORPORATION LIMITED (CPCL) imports crude oil for its requirements on a regular basis. Its requirements are estimated at 150 tonnes per month. Of late, there has been a surge in the prices of oil. The current price (month of June) of crude oil is ₹7,500 per barrel. The firm expects the price to rise in the coming months to ₹7,800 by August. It wants to hedge against the rising prices for some of its requirements of the month of August.

Multi Commodity Exchange (MCX) in India offers futures contracts in crude oil. The Contract size is 50 barrels and August contract is currently traded at ₹7,668 per barrel.

CPCL would like to hedge two-third its exposure in futures and leave the one-third to market conditions. While hedging, the number of futures contracts dealt with should be rounded off to the next higher integer.

Ignore marking-to-market and initial margin on futures contracts.

Given that 3 tonne = 22 barrels.

- (i) Number of contracts entered **1 Mark**
(a) 11 (b) 14
(c) 8 (d) 15
- (ii) Exposed portion is **1 Mark**
(a) 367 barrels (b) 350 barrels
(c) 750 barrels (d) None of the above
- (iii) What is the effective price per barrel for the whole requirement of August, **2 Marks**
If in August, the spot price is ₹7,570 and futures price is ₹7,788.
(a) 7,450 (b) 7,668
(c) 7,488.18 (d) None of the above
- (iv) If effective Price (in August) turns out to be 2% higher than current price of the June. What might be the Future Price in August. Given, forward premium in August is 1%. **2 Marks**
(a) 7702.64 (b) 7626.38
(c) 7650 (d) None of the above

Case Scenario: II

A mutual fund raised Rs. 250 lakhs on June 1, 2024, by issue of 25 lakh units at Rs. 10 per unit. The fund invested in several capital market instruments to build a portfolio of Rs. 220 lakhs, Initial expenses amounted to Rs. 12 lakhs. During the month of June, the fund sold certain instruments costing Rs. 84.75 lakhs for Rs. 89 lakhs and used the proceeds to purchase certain other securities for Rs. 81.6 lakhs. The fund management expenses for the month amounted to Rs. 16 lakhs of which Rs. 1,25,000 was in arrears. The fund earned dividends amounting to Rs. 2.5 lakhs and it distributed 70% of the realized earnings.

- (i) Cash balance of fund as on 30 June 2024 is (in lakhs) **2 Marks**
 (a) 8.425 (b) 9.675
 (c) 11.4 (d) 18
- (ii) If NAV as on 30-June 2024 was found to be 11.25. What should be the Market value of portfolio on 30th June? (in lakhs) **2 Marks**
 (a) 247.175 (b) 274.075
 (c) 272.825 (d) 281.25
- (iii) An investor subscribed to 1000 units on 1st June and disposed it off at closing NAV on 30th June. Assume tax rate on dividend is 30% & STCG tax rate is 20% in the hand of investor. Calculate his net annual return (net of tax). **2 Marks**
 (a) 11.32% (b) 135.87%
 (c) 120% (d) None of the above

PART II – Descriptive Questions (28 Marks)

1. Followings are the spot exchange rates quoted at three different forex markets: **7**
- | | |
|---------|-----------------------------|
| GBP/USD | 1.2425/1.2450 in New York |
| GBP/INR | 102.2525/102.7550 in London |
| USD/INR | 83.2500/83.7500 in Mumbai |
- The arbitrageur has USD 1 Million. Assuming that banks wish to retain an exchange margin of 0.15%. Every Retail Rates to be rounded to 4 decimals in multiples of 0.0025
 Explain whether there is any arbitrage gain possible from the quoted spot exchange rates.

2. Mr. Gopal sold five 4-Month Nifty Futures on 1st February 2024 for ₹ 12,00,000. At the time of closing of trading on the last Thursday of May 2024 (expiry), Index turned out to be 3100. The contract multiplier is 75. 7

Based on the above information calculate:

- (i) The price of one Future Contract on 1st February 2024.
- (ii) Approximate Nifty Sensex on 1st February 2024 if the Price of Future Contract on same date was theoretically correct. On the same day Risk Free Rate of Interest and Dividend Yield on Index was 9% and 6% p.a. respectively.
- (iii) The maximum Contango/ Backwardation.
- (iv) The pay-off of the transaction.

Note: Carry out calculation on month basis.

3. Following information is available for consideration: 7

BSE Index	50,000
Value of portfolio	₹1,01,00,000
Risk free interest rate	9% p.a.
Dividend yield on Index	6% p.a.
Beta of portfolio	2

We assume that a futures contract on the BSE index with 4 months maturity is used to hedge the value of portfolio over next 3 months. One future contract is for delivery of 50 times the index. Based on the information, calculate:

- (i) Price of future contract.
- (ii) Gain on short futures position if index turns out to be 45,000 in 3 months.

Note: Daily compounding (exponential) formula is not required to be used.

4. A company has a choice of investments between several different equity oriented mutual funds. The company has an amount of ₹100 lakhs to invest. The details of the mutual funds are as follows: 7

Mutual Funds	A	B	C	D	E
Beta	1.5	-1.0	0.8	2.0	0.7

PLAN I:

If the company invests 20% of its investments in each of the first two mutual funds (A and B) and balance in equal amounts in the mutual funds C, D and E, what is the beta of the portfolio?

PLAN II:

If the Company changes its policy to invest in any 3 securities with a minimum of 20% in each of these 3 securities to diversify risk, you are requested to advise the company to have a right mix of securities to maximize the return in the following two scenarios and also calculate the expected return:

- (1) Bull Phase: Expected Market returns: 10%
- (2) Bear Phase: Expected Market returns: -5%