

AFM/SFM Test-6

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

Time Allowed – 2 Hour

Maximum Marks - 60

All Questions are Compulsory.

Working Notes should form part of the respective answer.

PART I – Case Scenario based MCQs (18 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:

1. The following data is related to 8.5% fully convertible (into Equity shares) Bond:

Face value of Bond	₹ 1,000
Coupon Interest Rate	8.5%
Time Period of Maturity Remaining	4 Years
Interest payment	Annual, at the end of the Year
Principal payment	At the end of the Bond Maturity
Conversion parity Price	69
Percentage of Downside Risk	84%
Conversion premium	15%
Premium Payback period	3 Years

It can issue plain bonds without conversion option at an interest rate of 10.5%

Year	T1	T2	T3	T4
PVIAF @10.5%	0.905	0.819	0.741	0.671

- (i) Conversion ratio (number of shares per bond on conversion) is 2M
(a) 20 (b) 30
(c) 28 (d) 25
- (ii) Market price of bonds is 2M
(a) ₹1500 (b) ₹1600
(c) ₹1725 (d) ₹1575
- (iii) Straight value of Bond is 2M
(a) ₹937.56 (b) ₹994.60
(c) ₹1000 (d) ₹814.42

- (iv) Current market price of share is 2M
 (a) ₹55 (b) ₹60
 (c) ₹50 (d) ₹69
- (v) Expected dividend per share will be 2M
 (a) ₹1 (b) ₹0.50
 (c) ₹0.40 (d) ₹3
- MCQ-2.** Given a two-year, 10% coupon bond with a face value of ₹1,000 and with annual coupon payments that is fully taxable and selling at par, and an identical bond that is tax free, what would be the price on the tax-free bond have to be for an investor in a 30% tax bracket to be indifferent between the two bonds? 2M
 (a) ₹1054.24 (b) ₹1052.32
 (c) ₹960 (d) ₹1041.32
- MCQ-3.** An Indian invested USD 1,00,000 in USA when the US\$ was Rs. 72. The investment has appreciated by 10%, while the US\$ has become stronger by 4%. The investment return in Rupees is 2M
 (a) 6% (b) 14.40%
 (c) 5.58% (d) 9.60%
- MCQ-4.** The Sharpe ratio and Treynor ratio of a MUTUAL FUND are 0.37 and 4.16 respectively. The risk premium on the Fund is 6%. Standard deviation of the Fund's return is 11.80%. If the standard deviation of the Market Index's return is 9.56%, the beta & Correlation Co-efficient between return of the Fund and the Market will be 2M
 (a) 1.05 & 0.90 (b) 1.20 & 0.85
 (c) 1.05 & 0.85 (d) 1.50 & 0.72
- MCQ-5** A deeply out-of-the-money call will have a delta very close to.....; And a deeply in-the-money call will have a delta very close to..... 1M
 (a) 0,1 (b) 1,0
 (c) 0,0 (d) 1,1
- MCQ-6** The maximum possible loss for a covered call writer is..... 1M
 (a) Option premium (b) Current price of the underlying asset.
 (c) Strike Price (d) Initial investment Net of Premium.

PART II – Descriptive Questions (42 Marks)

1. On 1st October, an open-ended scheme of a mutual fund had 300 lakh units outstanding with Net Assets Value (NAV) of ₹22.50. At the end of October, it issued 6 Lakh units at opening NAV plus 2% load, adjusted for dividend equalization. At the end of November 3 lakhs units were repurchased at opening NAV less 2% exit load adjusted for dividend equalization. At the end of December 70% of its available income was distributed. 8

In respect of October-December quarter, the following additional information is available:

Particulars	₹ in Lakhs
Portfolio value appreciation	510.56
Income of October	27.54
Income of November	41.31
Income for December	54.54

You are required to calculate:

- (i) Income available for distribution;
- (ii) Issue price at the end of October;
- (iii) Repurchase price at the end of November; and
- (iv) Net Asset Value (NAV) as on 31st December.

(Present calculation up to 4 decimal points)

2. The following data are available for a bond: 8

Face value	₹ 1,000
Coupon Rate	12%
Years to Maturity	5
Redemption value	@5% premium
Yield to maturity	15%

(Round-off your answers to 3 decimals)

Calculate the following in respect of the bond:

- (i) Current Market Price.
- (ii) Duration of the Bond.
- (iii) Volatility of the Bond
- (iv) Convexity of the Bond
- (iv) Expected Price using convexity if yield increase by 150 basis Points.

3. An importer booked a forward contract with his bank on 10th April for USD 2,00,000 due on 10th June @ ₹ 84.4000. The bank covered its position in the market at ₹84.2800. 8

The exchange rates for dollar in the interbank market on 10th June and 13th June were:

	10 th June	13 th June
Spot USD 1 =	₹ 83.8000/8200	₹ 83.6800/7200
June	₹ 83.9200/9500	₹ 83.8000/8500
July	₹ 84.0500/0900	₹ 83.9300/9900
August	₹ 84.3000/3500	₹ 84.1800/2500
September	₹ 84.6000/6600	₹ 84.4800/5600

Exchange Margin 0.10% and interest on outlay of funds @ 12%. The importer requested on 13th June for extension of contract with due date on 10th August.

Rates rounded to 4 decimals in multiples of 0.0025

On 10th June, Bank Swaps by selling spot and buying one month forward.

Calculate:

- (i) Cancellation rate; (ii) Amount payable on \$ 2,00,000
 (iii) Swap Loss; (iv) Interest on outlay of funds, if any
 (v) New contract rate; (vi) Total Cost

4. Mr. Abhishek is interested in investing ₹ 5,00,000 for which he is considering following three alternatives: 7

Alt-1: Invest ₹5,00,000 in Mutual Fund X (MFX)

Alt-2: Invest ₹5,00,000 in Mutual Fund Y (MFY)

Alt-3: Invest ₹3,00,000 in Mutual Fund X (MFX) and ₹2,00,000 in Mutual Fund Y (MFY).

Average annual return earned by MFX and MFY is 20% and 18% respectively. Risk free rate of return is 10% and market rate of return is 15%.

Covariance of returns of MFX, MFY and market portfolio Mix are as follow:

	MFX	MFY	Mix
MFX	5.760	5.160	4.050
MFY	5.160	5.100	3.360
Mix	4.050	3.360	3.720

You are required to calculate:

- (i) variance of return from MFX, MFY and market return,
 (ii) portfolio return, beta, portfolio variance and portfolio standard deviation,
 (iii) expected return, systematic risk and unsystematic risk;

5. On April 1, 2024, Kasi has a portfolio consisting of four securities as shown below: 6

Security	Market Price	No. of Shares	β	Value
A	48.5	673	0.74	
K	332.68	480	1.28	
S	13.99	721	0.54	
P	292.82	358	0.46	

Cost of Capital is 16% p.a. compounded continuously. Kasi fears a fall in prices of shares in future. Accordingly, he approaches you for the advice to protect the interest of his Portfolio.

You can make use of the following information:

- (i) The current NIFTY Value is 9380.
 (ii) NIFTY Futures can be traded in units of 25 only.
 (iii) Futures for September are currently quoted at 9540 and Futures for October are being quoted at 9820.

You are required to calculate:

- (a) The Beta of his Portfolio.
 (b) Theoretical Value of Futures for contracts expiring in October.
 Given ($e^{0.067} = 1.0693$, $e^{0.08} = 1.0833$, $e^{0.093} = 1.0975$)
 (c) The number of NIFTY Contract that he would have to sell, if he desires to fully hedge the Portfolio until October.

6. There is a 9% 5-year bond (Face value 1,000) issued in the market @ 10% discount. And redeemable at 5% premium. For an investor with marginal income tax rate of 30% and capital gains tax rate of 10% (assuming no indexation), what is the post-tax yield to maturity? 5