
Incito Academy – Final CA – Test Series 2022 – SFM Test 3

Note:

1. **Maximum Marks = 100**
 2. **Time Allowed = 3 Hours**
 3. **All Questions are Compulsory**
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Question 1 (a)

Ramesh has identified stocks of two companies A and B having good investment potential:

Following data is available for these stocks:

Year	A (Market Price per Share in ₹)	B (Market Price per Share in ₹)
2013	19.60	8.70
2014	18.75	12.80
2015	33.42	16.20
2016	42.64	18.25
2017	43.25	15.60
2018	44.60	13.25
2019	34.75	18.60

You are required to calculate:

- i. The Risk and Return by investing in Stock A and B
- ii. The Risk and Return by investing in a portfolio of these Stocks if he invests in Stock A and B in proportion of 6 : 4
- iii. The better opportunity for investment

(8 Marks)

Question 1 (b)

X Ltd. purchased an asset for \$ 1,00,000 on 01.10.2021. The exchange rate on that date is \$ 1 = ₹ 74.00 – ₹ 74.60. The amount was to be settled after 3 months i.e., on 31.12.2021. On 01.10.2021 the forward rate available was \$ 1 = ₹ 74.30 – ₹ 75.00 for 3 months. X Ltd. entered into this forward exchange contract.

On 01.12.2021. X Ltd. is aware of the fact that it will be unable to make the payment on 31.12.2021 and requires an extension for 2 months and expected date of settlement shall be 28.02.2022.

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X Ltd. could convince the supplier to accept the delay. Therefore, the company plans for rollover of original contract on 01.12.2021, when the forward rate available for 1 month is \$ 1 = ₹ 74.70 - ₹ 75.50 & for 3 months is \$ 1 = ₹ 75.20 - ₹ 75.90.

Determine the following:

1. Action to be taken on 01.12.2021
2. Cancellation charges payable by X Ltd.
3. New Forward Rate applicable for extension
4. Overall impact of rollover on X Ltd.'s profit

(8 marks)

Question 1 (c)

An exporter is a UK based company. Invoice amount is \$ 3,50,000. Credit period is three months.

Exchange rates in London are:

Spot Rate	(\$/£) 1.5865 - 1.5905
3 - month Forward Rate	(\$/£) 1.6100 - 1.6140

Rates of interest in Money Market:

	Deposit	Loan
\$	7%	9%
£	5%	8%

Compute and show how a money market hedge can be put in place. Compare and contrast the outcome with a forward contract.

(4 Marks)

Question 2 (a)

Beta of X Ltd. with Nifty is 1.25 times. Mr. A holds 20,000 shares in X Ltd. which are currently priced at ₹ 120 per share. Mr. A expects the price of these shares to decline over coming 3 months and decides to use 3 months Nifty futures to hedge the risk.

3 months Nifty Futures is currently priced at ₹ 10,000 per Nifty. Mr. A wants to know the outcome of holding 3 months Nifty Futures under the following scenarios:

1. If after 3 months the price of X Ltd.'s share increases to ₹ 108 per share.

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2. If after 3 months the price of X Ltd.'s share falls to ₹ 126 per share.
3. If after 3 months the contract of Nifty futures is priced at ₹ 9,280 per Nifty for settlement.

After understanding the outcome of all possible situations as mentioned above Mr. A enters into Nifty Futures contract for hedging the stock risk for the period of 3 months.

After 3 months the actual price of X Ltd.'s share was ₹ 110 per share and contract of Nifty Futures got settled at ₹ 9,356 per Nifty.

Determine the net position on expiry of 3 months.

(8 marks)

Question 2 (b)

Sumana wanted to buy shares of EIL which has a range of ₹ 411 to ₹ 592 4 months later. The present price per share is ₹ 421. Her broker informs her that the price of this share can store up to ₹ 522 within 4 months or so, so that she should buy a 4 months CALL of EIL.

In order to be prudent in buying the call, the share price should be more than or at least ₹ 522 the assurance of which could not be given by her broker.

Though she understands the uncertainty of the market, she wants to know the probability of attaining the share price ₹ 592 so that buying of a 4 months Call of EIL at the execution price of ₹ 522 is justified. Advise her.

Take the risk free interest to be 10.8% p.a. (Given $e^{0.036} = 1.037$).

(8 marks)

Question 2 (c)

A call and put exist on the same stock each of which is exercisable at ₹ 60.

They now trade for:

Market price of Stock or stock index	₹ 55
Market price of call	₹ 9
Market price of put	₹ 1

Calculate the expiration date cash flow, investment value, and net profit from the following:

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1. Buy 1.0 call
2. Write 1.0 call
3. Buy 1.0 put
4. Write 1.0 put

For expiration date stock prices of ₹ 50, ₹ 55, ₹ 60, ₹ 65, ₹ 70.

(4 marks)

Question 3 (a)

Yes Ltd. wants to acquire No Ltd. and the cash flows of Yes Ltd. and the merged entity are given below:

(₹ in Lakhs)

Year	1	2	3	4	5
Yes Ltd.	175	200	320	340	350
Merged Entity	400	450	525	590	620

Earnings would have witnessed 5% constant growth rate without merger and 6% with merger on account of economies of operations after 5 years in each case. The cost of capital is 15%. The number of shares outstanding in both the companies before the merger is the same and the companies agree to an exchange ratio of 0.5 shares of yes Ltd. for each share of No Ltd.

PV factor at 15% for years 1 – 5 are 0.870, 0.756, 0.658, 0.572, 0.497 respectively.

You are required to:

- i) Compute the Value of Yes Ltd. before and after merger.
- ii) Value of Acquisition and
- iii) Gain to shareholders of Yes Ltd.

(8 marks)

Question 3 (b)

Mr. Lazy holds a portfolio with 2 stocks X and Y. Stock X has a standard deviation of 4% per day and stock Y has a standard deviation of 6% per day.

Mr. Lazy has invested ₹ 8,00,000 in Stock X and ₹ 12,00,000 in Stock Y. Stock X has a correlation coefficient of 0.72 with stock Y. Assuming 5

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trading days in a week, and using 99% confidence level, determine the maximum loss level over the period of 2 weeks (10 trading days)

Given that, value of 'Z' for 1% significance level from normal table of cumulative area = 2.33

(8 Marks)

Question 3 (c)

A Portfolio Manager (PM) has the following four stocks in his portfolio:

Security	No. of	Market Price Per	β
VSL	10,000	50	0.9
CSL	5,000	20	1.0
SML	8,000	25	1.5
APL	2,000	200	1.2

Compute the following:

1. Portfolio beta.
2. If the PM seeks to reduce the beta to 0.8. How much risk free investment should he bring in?
3. If the PM seeks to increase the beta to 1.2, how much risk free investment should he bring in?

(4 Marks)

Question 4 (a)

Consider the following data for the two companies:

	Acquirer Ltd.	Target Ltd.
Number of equity shares	10,00,000	4,00,000
Market Price per share (₹)	400	80
Price Earnings Ratio	16 times	4 times

Acquirer Ltd. considers acquisition of Target Ltd. and offers for a stock swap on the basis of market price. However, Target Ltd. demands the stock swap on the basis of EPS.

It was finally negotiated to provide to the shareholders of Target Ltd., the average of lower and upper limit of number of shares determined as per the two modes as mentioned above. It is expected that the overall profit of the merged entity will increase by 25% due to effects of synergy.

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Assuming that the P/E ratio of Acquirer Ltd. remains unchanged after the merger, you are required to determine the following:

1. Swap Ratio and number of shares to be issued as consideration.
2. Post-Merger Earnings per Share.
3. Equivalent EPS for shareholders of Target Ltd.
4. Post-Merger Market Price per Share.
5. Gain or Loss in value to shareholders of both the companies.
6. Loss in earnings for shareholders of Target Ltd.

Considering the synergic effects, are the shareholders of Target Ltd. better-off on the basis of following parameters:

1. Market Capitalisation
2. Total Earnings

(8 Marks)

Question 4 (b)

Opus Technologies Ltd., an Indian IT company is planning to make an investment through a wholly owned subsidiary in a software project in China with a shelf life of two years. The inflation in China is estimated as 8 percent. Operating cash flows are received at the year end.

For the project an initial investment of Chinese Yuan (CN¥) 30,00,000 will be in land. The land will be sold after the completion of project at estimated value of CN¥ 35,00,000. The project also requires an office complex at cost of CN¥ 15,00,000 payable at the beginning of project. The complex will be depreciated on straight-line basis over two years to a zero salvage value. This complex is expected to fetch CN¥ 5,00,000 at the end of project.

The company is planning to raise the required funds through GDR issue in Mauritius. Each GDR will have 5 common equity shares of the company as underlying security which are currently trading at ₹ 200 per share (Face Value = ₹ 10) in the domestic market. The company has currently paid the dividend of 25% which is expected to grow at 10% p.a. The total issue cost is estimated to be 1 percent of issue size.

The annual sales is expected to be 10,000 units at the rate of CN¥ 500 per unit. The price of unit is expected to rise at the rate of inflation. Variable

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operating costs are 40 percent of sales. Fixed operating costs will be CN¥ 22,00,000 per year and expected to rise at the rate of inflation.

The tax rate applicable in China for income and capital gain is 25 percent and as per GOI Policy no further tax shall be payable in India. The current spot rate of CN¥ 1 is ₹ 9.50. The nominal interest rate in India and China is 12% and 10% respectively and the international parity conditions hold.

You are required to:

- (a) Identify expected future cash flows in China and determine NPV of the project in CN¥.
- (b) Determine whether Opus Technologies should go for the project or not assuming that there neither there is restriction on the transfer of funds from China to India nor any charges/taxes payable on the transfer of funds.

(8 Marks)

Question 4 (c)

M/s. Parker & Co. is contemplating to borrow an amount of ₹ 60 crores for a period of 3 months in the coming 6 months' time from now. The current rate of interest is 9% p.a., but it may go up in 6 months' time. The company wants to hedge itself against the likely increase in interest rate.

The Company's Bankers quoted an FRA (Forward Rate Agreement) at 9.30% p.a.

What will be the effect of FRA and actual rate of interest cost to the company, if the actual rate of interest after 6 months happens to be

- (i) 9.60% p.a. and
- (ii) 8.80% p.a.?

(4 marks)

Question 5 (a)

On 01.04.2022 ABC Mutual Fund issued 20 lakh units at ₹ 10 per unit. Relevant initial expenses involved were ₹ 12 lakhs. It invested the fund so raised in capital market instruments to build a portfolio of ₹ 185 lakhs. During the month of April 2022 it disposed off some of the instruments costing ₹ 60 lakhs for ₹ 63 lakhs and used the proceeds in purchasing securities for ₹ 56 lakhs.

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Fund management expenses for the month of April 2022 was ₹ 8 lakhs of which 10% was in arrears. In April 2022 the fund earned dividends amounting to ₹ 2 lakhs and it distributed 80% of the realized earnings. On 30th April 2022 the market value of the portfolio was ₹ 198 lakhs.

Mr. Akash, an investor, subscribed to 100 units on 1st April 2022 and disposed off the same at closing NAV on 30th April 2022. What was his annual rate of earning?

(8 Marks)

Question 5 (b)

The closing value of Sensex for the month of October, 2007 is given below:

Date Closing	Sensex Value
1.10.07	2800
3.10.07	2780
4.10.07	2795
5.10.07	2830
8.10.07	2760
9.10.07	2790
10.10.07	2880
11.10.07	2960
12.10.07	2990
15.10.07	3200
16.10.07	3300
17.10.07	3450
19.10.07	3360
22.10.07	3290
23.10.07	3360
24.10.07	3340
25.10.07	3290
29.10.07	3240
30.10.07	3140
31.10.07	3260

You are required to test the week from of efficient market hypothesis by applying the run test at 5% and 10% level of significance.

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Following value can be used:

Value of t at 5% is 2.101 at 18 degrees of freedom

Value of t at 10% is 1.734 at 18 degrees of freedom

Value of t at 5% is 2.086 at 20 degrees of freedom

Value of t at 10% is 1.725 at 20 degrees of freedom

(8 Marks)

Question 5 (c)

Odessa Limited has proposed to expand its operations for which it requires funds of \$ 15 million, net of issue expenses which amount to 2% of the issue size. It proposed to raise the funds through a GDR issue. It considers the following factors in pricing the issue:

1. The expected domestic market price of the share is ₹ 300
2. 3 shares underlie each GDR
3. Underlying shares are priced at 10% discount to the market price
4. Expected exchange rate is ₹ 60/\$

You are required to compute the number of GDR's to be issued and cost of GDR to Odessa Limited, if 20% dividend is expected to be paid with a growth rate of 20%.

(4 Marks)

End of Test

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