MODEL TEST PAPER - 5

FINAL COURSE: GROUP – I

PAPER – 2: ADVANCED FINANCIAL MANAGEMENT

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs)*
3. *Part II comprises questions which require descriptive type answers.*

PART I – Case Scenario based MCQs (30 Marks)

Part I is compulsory.

Case Scenario I

SM Limited has a market capitalization of ₹ 3,000 crore and the current earnings per share (EPS) is ₹ 200 with a price earnings ratio (PER) of 15. The Board of directors is considering a proposal to buy back 20% of the shares at a premium which can be supported by the financials of the company. The Boards expects post buy back market price per share (MPS) of ₹ 3057. Post buy back PER will remain same. The company proposes to fund the buy back by availing 8% bank loan since available resources are committed for expansion plans.

Applicable income tax rate is 30%.

Based on above Case Scenario, select the most appropriate alternative.

1. The number of shares proposed to be bought back is……..
   (a) 12 lakhs
   (b) 15 lakhs
   (c) 20 lakhs
   (d) 22 lakhs
2. The interest amount which can be paid for availing the bank loan
   (a) ₹ 5,280.00 Lakhs
   (b) ₹ 5,575.00 Lakhs
   (c) ₹ 4865.00 Lakhs
   (d) ₹ 6485.00 Lakhs

3. The loan amount to be raised and

   (a) ₹ 55650 Lakhs

   (b) ₹ 62300 Lakhs

   (c) ₹ 66000 Lakhs

   (d) ₹ 72450 Lakhs

4. The premium per share paid over the current MPS

   (a) ₹ 200

   (b) ₹ 250

   (c) ₹ 300

   (d) ₹ 350

5. % premium over CMP shall be ……..

   (a) 12%

   (b) 14%

   (c) 10%

   (d) 15% **(5 x 2 = 10 Marks)**

Case Scenario III

You are a financial analyst at a prominent investment firm tasked with empirically verifying the weak form of Efficient Market Theory (EMT) for the XYZ Stock Index, a collection of diverse stocks. You decide to conduct three different tests to assess whether the stock market follows the principles of the weak form of EMT.

Test 1

For the past five years, you collect daily price changes of the stocks in the XYZ Stock Index. You calculate autocorrelation coefficients for different lag periods and analyze whether past price changes exhibit any significant correlation with future price changes. The results indicate that most autocorrelation coefficients are close to zero and statistically insignificant, suggesting those past price changes do not predict future price changes.

Test 2

You further investigate the randomness of price changes in the XYZ Stock Index. Analyzing the sequence of daily price changes, you count the number of runs where price changes are consistently positive or negative. Upon comparing the observed number of runs with the expected number based on randomness, you find that they align closely, supporting the idea that price changes follow a random pattern.

Test 3

To examine the efficacy of trading strategies based on historical price trends, you implement a simple trading rule for the XYZ Stock Index. The rule involves buying when the price crosses a certain moving average % threshold and selling when it crosses another % threshold. Over a period of testing, you compute the returns generated by the trading strategy. The results reveal that the returns are not consistently better than random chance, implying that past price trends do not reliably predict future price movements.

Conclusion:

After conducting the three tests the evidence supports the weak form of Efficient Market Theory for the XYZ Stock Index. The lack of correlation, the randomness of price change patterns, and the inability of the trading strategy to consistently outperform random chance suggests that past price trends do not reliably predict future price movements.

Based on the above information answer the following questions:

6. What does the serial correlation test assess in the context of the weak form of Efficient Market Theory?
   (a) The randomness in stock price changes
   (b) The correlation between different stocks in the XYZ Stock Index.
   (c) The impact of economic events on stock prices.
   (d) The effectiveness of technical analysis strategies.
7. Test 2 is called as:
   (a) Serial Correlation test.
   (b) Run test.
   (c) Filter Rules test.

(d) Variance Ratio test.

8. In the filter rule test, filter rules do not apply if:

   (a) the behavior of stock price changes is predictable.

   (b) the behavior of stock price changes is dependent on past trends.

   (c) the behavior of stock price changes is correlated.

   (d) the behavior of stock price changes is random.

9. Based on the results of the three tests, what conclusion can be drawn about the weak form of Efficient Market Theory for the XYZ Stock Index?

   (a) Past price changes predict future price changes reliably.

   (b) Stock prices do not reflect available information.

   (c) The stock market follows a random pattern of price changes.

   (d) Technical analysis strategies consistently outperform randomness.

10. Test 1 is called as:

   (a) Serial Correlation test.

   (b) Filter Rules test.

   (c) Run test.

   (d) Variance Ratio test.

11. Test 3 is called as:

   (a) Serial Correlation test.

   (b) Filter Rules test.

   (c) Run test.

   (d) Variance Ratio test. **(6 x 2 = 12 Marks)**

Case Scenario III

The Asset Management Company of the mutual fund (MF) has declared a dividend of 9.98% on the units under the dividend reinvestment plan for the year ended 31st March 2021. The investors are issued additional units for the dividend at the rate of closing Net Asset Value (NAV) for the year as per the conditions of the scheme.

The closing NAV was ₹ 24.95 as on 31st March 2021. An investor Mr. X who is having 20,800 units at the year-end has made an investment in the units before the declaration of the dividend and at the rate of opening NAV plus an entry load of ₹ 0.04. The NAV has appreciated by 25% during the year.

Assume the face value of the unit as ₹ 10.00.

Based on above Case Scenario, select the most appropriate alternative.

12. The Opening NAV of the Asset Management Company shall be ……

    (a) ₹ 20.24

    (b) ₹ 19.96

    (c) ₹ 18.75

    (d) ₹ 17.65

13. The Number of the units purchased shall be …….

    (a) 18750

    (b) 17500

    (c) 20450

    (d) 20000

14. Original amount of the investment shall be ……

    (a) ₹ 4,00,000

    (b) ₹ 6,50,000

    (c) ₹ 3,55,000

    (d) ₹ 5,65,000

15. Which of the following statement about Expense ratio is/ are incorrect:

    (i) It is the percentage of income that were spent to run a mutual fund.

    (ii) It includes advisory fees, travel costs, registrar fees , custodian fees, etc.

    (iii) It includes Brokerage costs for trading of Portfolio.

    (iv) High Expense Ratio can seriously undermine the performance of a mutual fund scheme.

    (a) (i), (ii), (iii)

(b) (i), (iii)

(c) only (iii)

(d) only (i) **(4 x 2 = 8 Marks)**

PART – II DESCRIPTIVE QUESTIONS

Question No.1 is compulsory. Candidates are required to answer any four questions from the remaining five questions.

Working notes should form part of the answers.

Maximum Marks – 70 Marks

1. (a) Project X and Project Y are under the evaluation of XY Co. The estimated cash flows and their probabilities are as below:

Project X: Investment (year 0) ₹ 70 lakhs

Probability weights	**0.30**	**0.40**	**0.30**
Years	**₹ lakhs**	**₹ lakhs**	**₹ lakhs**
1	30	50	65
2	30	40	55
3	30	40	45

Project Y: Investment (year 0) ₹ 80 lakhs.

Probability weighted	**Annual cash flows through life**
	₹ lakhs
0.20	40
0.50	45
0.30	50

(i) Which project is better based on NPV, criterion with a discount rate of 10%?

(ii) Compute the standard deviation of the present value distribution and analyse the inherent risk of the projects.

(6 Marks)

(b) An importer booked a forward contract with his bank on 10th April for USD 2,00,000 due on 10th June @ ₹ 64.4000. The bank covered its position in the market at ₹ 64.2800.

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

	10th June	13th June
Spot USD 1=	₹ 63.8000/8200	₹ 63.6800/7200
Spot/June	₹ 63.9200/9500	₹ 63.8000/8500
July	₹ 64.0500/0900	₹ 63.9300/9900
August	₹ 64.3000/3500	₹ 64.1800/2500
September	₹ 64.6000/6600	₹ 64.4800/5600

Exchange Margin 0.10% and interest on outlay of funds @ 12%. The importer requested on 14th June for extension of contract with due date on 10th August.

Rates to be rounded off 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 **(4 Marks)**

(c) What do you mean by Pitch Presentation? What are the points that should be kept in mind while preparing a Pitch Presentation.

(4 Marks)

2. (a) An Indian exporting firm, Rohit and Bros., would be covering itself against a likely depreciation of pound sterling. The following data is given:

Receivables of Rohit and Bros : £500,000

Spot rate : ₹ 56.00/£

Payment date : 3-months

3 months interest rate : India: 12 per cent per annum

: UK: 5 per cent per annum

What should the exporter do? **(6 Marks)**

(b) You sold Hong Kong Dollar 1,00,00,000 value spot to your customer at ₹ 5.70 & covered yourself in London market on the same day, when the exchange rates were

US$ 1 = H.K.$ 7.5880 7.5920

Local inter bank market rates for US$ were

Spot US$ 1 = ₹ 42.70 42.85

Calculate cover rate and ascertain the profit or loss in the transaction. Ignore brokerage. **(4 Marks)**

(c) What are the major components of Financial planning. **(4 Marks)**

3. (a) Mr. X owns a portfolio with the following characteristics:

	Security A	**Security B**	**Risk Free security**
Factor 1 sensitivity	0.80	1.50	0
Factor 2 sensitivity	0.60	1.20	0
Expected Return	15%	20%	10%

It is assumed that security returns are generated by a two factor model.

(i) If Mr. X has ₹ 1,00,000 to invest and sells short ₹ 50,000 of security B and purchases ₹ 1,50,000 of security A what is the sensitivity of Mr. X's portfolio to the two factors?

(ii) If Mr. X borrows ₹ 1,00,000 at the risk free rate and invests the amount he borrows along with the original amount of ₹ 1,00,000 in security A and B in the same proportion as described in part (i), what is the sensitivity of the portfolio to the two factors?

(iii) What is the expected return premium of factor 2?**(10 Marks)**

(b) What are the areas where Application of Blockchain can be noticed?

(4 Marks)

4. (a) Tender Ltd has earned a net profit of ₹ 15 lacs after tax at 30%. Interest cost charged by financial institutions was ₹ 10 lacs. The invested capital is ₹ 95 lacs of which 55% is debt. The company maintains a weighted average cost of capital of 13%. Required,

(i) Compute the operating income.

(ii) Compute the Economic Value Added (EVA).

(iii) Tender Ltd. has 6 lac equity shares outstanding. How much dividend can the company pay before the value of the entity starts declining? **(6 Marks)**

(b) What are the factors affecting Economic Analysis? **(4 Marks)**

(c) What are the techniques to manage Counter Party Risk?

Or

What are the main types of risk associated with investment in Collateralized Debt Obligation (CDOs)? **(4 Marks)**

5. (a) Perfect Inc., a U.S. based Pharmaceutical Company has received an offer from Aidscure Ltd., a company engaged in manufacturing of drugs to cure Dengue, to set up a manufacturing unit in Baddi (H.P.), India in a joint venture.

As per the Joint Venture agreement, Perfect Inc. will receive 55% share of revenues plus a royalty @ US $0.01 per bottle. The initial investment will be ₹ 200 crores for machinery and factory. The scrap value of machinery and factory is estimated at the end of five (5) year to be ₹ 5 crores. The machinery is depreciable @ 20% on the value net of salvage value using Straight Line Method. An initial working capital to the tune of ₹ 50 crores shall be required and thereafter ₹ 5 crores each year.

As per GOI directions, it is estimated that the price per bottle will be ₹ 7.50 and production will be 24 crores bottles per year. The price in addition to inflation of respective years shall be increased by ₹ 1 each year. The production cost shall be 40% of the revenues.

The applicable tax rate in India is 30% and 35% in US and there is Double Avoidance Agreement between India and US. According to the agreement tax credit shall be given in US for the tax paid in

India. In both the countries, taxes shall be paid in the following year in which profit have arisen/ remittance received.

Spot rate of $ is ₹ 57. The inflation in India is 6% (expected to decrease by 0.50% every year) and 5% in US.

As per the policy of GOI, only 50% of the share can be remitted in the year in which they are realised and remaining in the following year.

Though WACC of Perfect Inc. is 13% but due to risky nature of the project it expects a return of 15%.

Determine whether Perfect Inc. should invest in the project or not (from subsidiary point of view). **(10 Marks)**

(b) A Mutual Fund is holding the following assets in ₹ Crores :

Investments in diversified equity shares	90.00
Cash and Bank Balances	10.00
	100.00

The Beta of the equity shares portfolio is 1.1. The index future is selling at 4300 level. The Fund Manager apprehends that the index will fall at the most by 10%. How many index futures he should short for perfect hedging? One index future consists of 50 units.

Substantiate your answer assuming the Fund Manager's apprehension will materialize. **(4 Marks)**

6. (a) Details about portfolio of shares of an investor is as below:

Shares	No. of shares (lakh)	Price per share	Beta
A Ltd.	3.00	₹ 500	1.40
B Ltd.	4.00	₹ 750	1.20
C Ltd.	2.00	₹ 250	1.60

The investor thinks that the risk of portfolio is very high and wants to reduce the portfolio beta to 0.91. He is considering two below mentioned alternative strategies:

(i) Dispose off a part of his existing portfolio to acquire risk free securities, or

(ii) Take appropriate position on Nifty Futures which are currently traded at 8125 and each Nifty points is worth ₹ 200.

You are required to determine:

(1) portfolio beta,

(2) the value of risk free securities to be acquired,

(3) the number of shares of each company to be disposed off,

(4) the number of Nifty contracts to be bought/sold **(8 Marks)**

(b) A textile manufacturer has taken floating interest rate loan of ₹ 40,00,000 on 1st April, 2012. The rate of interest at the inception of loan is 8.5% p.a. interest is to be paid every year on 31st March. In the month of October 2012, the Central bank of the country releases following projections about the interest rates likely to prevail in future.

(i) On 31st March, 2013, at 8.75%; on 31st March, 2014 at 10% on 31st March, 2015 at 10.5% and on 31st March, 2016 at 7.75%. Show how the borrower can hedge the risk using Option Cap arising out of expected rise in the rate of interest when he wants to peg his interest cost at 8.50% p.a.

(ii) Assume that the premium negotiated by both the parties is 0.75% to be paid at once on 1st October, 2012 and the actual rate of interest on the respective due dates happens to be as: on 31st March, 2013 at 10.2%; on 31st March, 2014 at 11.5%; on 31st March, 2015 at 9.25%; on 31st March, 2016 at 8.25%. Show how the settlement will be executed on the perspective interest due dates. **(6 Marks)**