MODEL TEST PAPER - 4

FINAL COURSE: GROUP – I

PAPER – 2: ADVANCED FINANCIAL MANAGEMENT

ANSWER TO PART – I CASE SCENARIO BASED MCQS

1. Option (b)

2. Option (c)

3 Option (c)

4. Option (d)

5. Option (c)

6. Option (b)

7. Option (a)

8. Option (c)

9. Option (b)

10. Option (c)

11. Option (b)

12. Option (a)

13. Option (c)

14. Option (c)

15. Option (c)

ANSWERS OF PART – II DESCRIPTIVE QUESTIONS

1. (a) (i) Cancellation Rate

The forward sale contract shall be cancelled at Spot TT Purchase for $ prevailing on the date of cancellation as follows:

$/ ₹ Market Buying Rate	₹ 63.6800
Less: Exchange Margin @ 0.10%	₹ 0.0636
	₹ 63.6163

Rounded off to ₹ 63.6175

(ii) Amount payable on $ 2,00,000

Bank sells $2,00,000 @ ₹ 64.4000	₹ 1,28,80,000
Bank buys $2,00,000 @ ₹ 63.6175	₹ 1,27,23,500
Amount payable by customer	₹ 1,56,500

(iii) Swap Loss

On 10th June the bank does a swap sale of $ at market buying rate of ₹ 63.8000 and forward purchase for June at market selling rate of ₹ 63.9500.

Bank buys at	₹ 63.9500
Bank sells at	₹ 63.8000
Amount payable by customer	₹ 0.1500

Swap Loss for $ 2,00,000 is ₹ = ₹ 30,000

(iv) Interest on Outlay of Funds

On 10th June, the bank receives delivery under cover contract at ₹ 64.2800 and sell spot at ₹ 63.8000.

Bank buys at	₹ 64.2800
Bank sells at	₹ 63.8000
Amount payable by customer	₹ 0.4800

Outlay for $ 2,00,000 is ₹ 96,000

Interest on ₹ 96,000 @ 12% for 3 days = ₹ 96

(v) New Contract Rate

The contract will be extended at current rate

$/ ₹ Market forward selling Rate for August	₹ 64.2500
Add: Exchange Margin @ 0.10%	₹ 0.0643
	₹ 64.3143

Rounded off to ₹ 64.3150

(vi) Total Cost

Cancellation Charges	₹ 1,56,500.00
Swap Loss	₹ 30,000.00

Interest	₹ 96.00
	₹ 1,86,596.00

(b) Broadly, Financial Risk can be divided into following categories.

Counter Party Risk

This risk occurs due to non-honoring of obligations by the counter party which can be failure to deliver the goods for the payment already made or vice-versa or repayment of borrowings and interest etc. Thus, this risk also covers the credit risk i.e. default by the counter party.

Political Risk

Generally, this type of risk is faced by and overseas investors, as the adverse action by the government of host country may lead to huge loses. This can be on any of the following form.

- Confiscation or destruction of overseas properties.
- Rationing of remittance to home country.
- Restriction on conversion of local currency of host country into foreign currency.
- Restriction as to borrowings.
- Invalidation of Patents
- Price control of products

Interest Rate Risk

This risk occurs due to change in interest rate resulting in change in asset and liabilities. This risk is more important for banking companies as their balance sheet's items are more interest sensitive and their base of earning is spread between borrowing and lending rates.

As we know that the interest rates are of two types i.e. fixed and floating. The risk in both of these types is inherent. If any company has borrowed money at floating rate then with increase in floating the liability under fixed rate shall remain the same. This fixed rate, with falling floating rate the liability of company to pay interest under fixed rate shall comparatively be higher.

Currency Risk

This risk mainly affects the organization dealing with foreign exchange as their cash flows changes with the movement in the currency exchange rates. This risk can affect cash flow both adversely or favorably. For example, if rupee depreciates vis-à-vis US$ receivables will stand to gain vis-à-vis to the importer who has the liability to pay bill in US$. The best case we can quote Infosys (Exporter) and Indian Oil Corporation Ltd. (Importer).

Liquidity Risk

Broadly liquidity risk can be defined as inability of organization to meet it liabilities whenever they become due.

This risk mainly arises when organization is unable to generate adequate cash or there may be some mismatch in period of cash flow generation.

This type of risk is more prevalent in banking business where there may be mismatch in maturities and receiving fresh deposits pattern.

2. **(a)** **(i)** On the basis of standard deviation project X be chosen because it is less risky than Project Y having higher standard deviation.

(ii) $CV_x = \frac{SD}{ENPV} = \frac{90,000}{1,22,000} = 0.738$

$CV_y = \frac{1,20,000}{2,25,000} = 0.533$

On the basis of Co-efficient of Variation (C.V.) Project X appears to be riskier and hence Y should be accepted.

(iii) However, the NPV method in such conflicting situation is best because the NPV method is in compatibility of the objective of wealth maximization in terms of time value.

(b) Forward Rate = $\frac{2.50(1+0.075)}{(1+0.060)}$ = Can$ 2.535/£

(i) If spot rate decline by 2%

Spot Rate = Can$ 2.50 x 1.02 = Can$ 2.55/£

	£
£ receipt as per Forward Rate (Can $ 5,00,000/ Can$ 2.535)	1,97,239
£ receipt as per Spot Rate (Can $ 5,00,000/ Can$ 2.55)	1,96,078
Gain due to forward contract	1,161

(ii) If spot rate gains by 4%

Spot Rate = Can$ 2.50 x 0.96 = Can$ 2.40/£

	£
£ receipt as per Forward Rate (Can $ 5,00,000/ Can$ 2.535)	1,97,239
£ receipt as per Spot Rate (Can $ 5,00,000/ Can$ 2.40)	2,08,333
Loss due to forward contract	11,094

(iii) If spot rate remains unchanged

	£
£ receipt as per Forward Rate (Can $ 5,00,000/ Can$ 2.535)	1,97,239
£ receipt as per Spot Rate (Can $ 5,00,000/ Can$ 2.50)	2,00,000
Loss due to forward contract	2,761

(c) Structure of Venture Capital Fund in India

Three main types of fund structure exist: one for domestic funds and two for offshore ones:

(i) Domestic Funds: Domestic Funds (i.e. one which raises funds domestically) are usually structured as:

i) a domestic vehicle for the pooling of funds from the investor, and

ii) a separate investment adviser that carries those duties of asset manager.

The choice of entity for the pooling vehicle falls between a trust and a company, (India, unlike most developed countries does not recognize a limited partnership), with the trust form prevailing due to its operational flexibility.

(ii) Offshore Funds: Two common alternatives available to offshore investors are: the "offshore structure" and the "unified structure".

Offshore structure

Under this structure, an investment vehicle (an LLC or an LP organized in a jurisdiction outside India) makes investments directly into Indian portfolio companies. Typically, the assets are managed by an offshore manager, while the investment advisor in India carries out the due diligence and identifies deals.

Unified Structure

When domestic investors are expected to participate in the fund, a unified structure is used. Overseas investors pool their assets in an offshore vehicle that invests in a locally managed trust, whereas domestic investors directly contribute to the trust. This is later used to make the local portfolio investments.

3. (a) High growth phase :

k_e = 0.10 + 1.15 x 0.06 = 0.169 or 16.9%.

k_d = 0.13 x (1-0.3) = 0.091 or 9.1%.

Cost of capital = 0.5 x 0.169 + 0.5 x 0.091 = 0.13 or 13%.

Stable growth phase :

k_e = 0.09 + 1.0 x 0.05 = 0.14 or 14%.

k_d = 0.1286 x (1 - 0.3) = 0.09 or 9%.

Cost of capital = 0.6 x 0.14 + 0.4 x 0.09 = 0.12 or 12%.

Determination of forecasted Free Cash Flow of the Firm (FCFF)

(₹ in crores)

	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Terminal Year
Revenue	2,400	2,880	3,456	4,147.20	4,561.92
EBIT	360	432	518.40	622.08	684.29
EAT	252	302.40	362.88	435.46	479.00
Capital Expenditure	96	115.20	138.24	165.89	-
Less: Depreciation					
∆ Working Capital	100.00	120.00	144.00	172.80	103.68
Free Cash Flow (FCF)	**56.00**	**67.20**	**80.64**	**96.77**	**375.32**

Alternatively, it can also be computed as follows:

(₹ in crores)

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EBIT	360	432	518.40	622.08	684.29
EAT	252	302.40	362.88	435.46	479.00
Add: Depreciation	240	288	345.60	414.72	456.19
	492	590.40	708.48	850.18	935.19
Less: Capital Exp	336	403.20	483.84	580.61	456.19
∆ WC	100.00	120.00	144.00	172.80	103.68
	56.00	**67.20**	**80.64**	**96.77**	**375.32**

Present Value (PV) of FCFF during the explicit forecast period is:

FCFF (₹ in crores)	PVF@13%	PV (₹ in crores)
56.00	0.885	49.56
67.20	0.783	52.62
80.64	0.693	55.88
96.77	0.613	59.32
		₹ 217.38

Terminal Value of Cash Flow

$$\frac{375.32}{0.12 - 0.10} = ₹\,18,766.00\,\text{Crores}$$

PV of the terminal, value is:

$$₹\,18,766.00\,\text{Crores} \times \frac{1}{(1.13)^4} = ₹\,18,766.00\,\text{Crores} \times 0.613 = ₹\,11,503.56\,\text{Crores}$$

The value of the firm is :

₹ 217.38 Crores + ₹ 11,503.56 Crores = ₹ 11,720.94 Crores

(b) In post-pandemic time their role has been advanced in the following areas in addition to traditional role:

(i) **Risk Management:** Now a days the CFOs are expected to look after the overall functioning of the framework of Risk Management system of an organisation.

(ii) **Supply Chain**: Post pandemic supply chain management system has been posing the challenge for the company to maintain the sustainable growth. Since CFOs are care takers of finance of the company, considering the financial viability of the Supply Chain Management their role has now become more critical.

(iii). **Mergers, acquisitions, and Corporate Restructuring:** Since in recent period to maintain the growth and capture the market share there has been a spate of Mergers and Acquisitions and hence the role of CFOs has become more crucial because these are strategic decision and any error in them can lead to collapse of the whole business.

(iv) **Environmental, Social and Governance (ESG) Financing**: With the evolving of the concept of ESG their role has been shifted from traditional financing to sustainability financing.

Thus, from above discussion it can be concluded that in today's time CFOs are taking a leadership role in Value Creation for the organisation and that too on sustainable basis for a longer period.

Or

It is a combination of following 3 words:

Credit: Loan given

Default: Non payment

Swap: Exchange of Liability or Risk

Accordingly, CDS can be defined as an insurance (not in stricter sense) against the risk of default on a debt which may be debentures, bonds etc.

Under this arrangement, one party (called buyer) needing protection against the default pays a periodic premium to another party (called seller), who in turn assumes the default risk. Hence, in case default takes place then there will be settlement and in case no default takes place no cash flow will accrue to the buyer alike option contract and agreement is terminated. Although it resembles the options but since element of choice is not there it more resembles the swap arrangements.

Amount of premium mainly depends on the price of underlying and especially

when the credit risk is more.

Parties to CDS

In a CDS at least three parties are involved which are as follows:

The initial borrowers- It is also called a 'reference entity', which are owing a loan or bond obligation.

Buyer- It is also called 'investor' i.e. the buyer of protection. The buyer will make regular payment to the seller for the protection from default or credit event of reference entity.

Seller- It is also called 'writer' of the CDS and makes payment to buyer in the event of credit event of reference entity. It receives a regular pay off from the buyer of CDS.

4. (a)

(i)	**E Ltd.**	**H Ltd.**
Market capitalization	1000 lakhs	1500 lakhs
No. of shares	20 lakhs	15 lakhs
Market Price per share	₹ 50	₹ 100

P/E ratio	10		5
Earnings per share	₹ 5		₹ 20
Profit	₹ 100 lakh		₹ 300 lakh
Share capital	₹ 200 lakh		₹ 150 lakh
Reserves and surplus	₹ 600 lakh		₹ 330 lakh
Total	₹ 800 lakh		₹ 480 lakh
Book Value per share	₹ 40		₹ 32

(ii) Calculation of Swap Ratio

EPS	1 : 4 i.e.	4.0 × 40%	1.6
Book value	1 : 0.8i.e.	0.8 × 25%	0.2
Market price	1 : 2 i.e.	2.0 × 35%	0.7
		Total	2.5

Swap ratio is for every one share of H Ltd., to issue 2.5 shares of E Ltd. Hence, total no. of shares to be issued 15 lakh × 2.5 = 37.50 lakh shares.

(iii) Promoter's holding = 9.50 lakh shares + (10× 2.5 = 25 lakh shares)

= 34.50 lakh i.e. Promoter's holding % is (34.50 lakh/57.50 lakh) × 100 = 60%.

(iv) Calculation of EPS after merger

Total No. of shares 20 lakh + 37.50 lakh = 57.50 lakh

$$\text{EPS} \quad \frac{\text{Total profit}}{\text{No. of shares}} = \frac{100 \text{ lakh} + 300 \text{ lakh}}{57.50 \text{ lakh}} = \frac{400}{57.50} =$$

₹ 6.956

(v) Calculation of Market price and Market capitalization after merger

Expected market price	= EPS 6.956 × P/E 10 = ₹ 69.56
Market capitalization	= ₹ 69.56 per share × 57.50 lakh shares
	= ₹ 3,999.70 lakh or ₹ 4,000 lakh

(vi) Free float of market capitalization = ₹ 69.56 per share × (57.50 lakh × 40%) = ₹ 1599.88 lakh

(b) Following are some similarities between Tokenization and Securitization:

(i) **Liquidity: -** First and foremost both Securitization and Tokenization inject liquidity in the market for the assets which are otherwise illiquid assets.

(ii) **Diversification: -** Both help investors to diversify their portfolio thus managing risk and optimizing returns.

(iii) **Trading: -** Both are tradable hence helps to generate wealth.

(iv) **New Opportunities: -** Both provide opportunities for financial institutions and related agencies to earn income through collection of fees.

5. **(a)** Here we shall evaluate NPV in two possible situations:

(1) **As on Today**

At cost of Capital of 10%, the value of saving forever = $\frac{₹\ 21\ \text{lakhs}}{0.10}$

= ₹ 2.1 crore

NPV = ₹ 2.1 crore - ₹ 2.5 crore = - ₹ 0.4 crore

Since NPV is negative, it does not worth to accept the project.

(2) **After one Year**

After one year these are two possible situations, either rate of electricity decreases or increase.

(i) If price of electricity increases

At cost of Capital of 10%, the value of saving forever = $\frac{₹35\ \text{lakh}}{0.10}$

= ₹ 3.50 crore

The position of the NPV will be as follows:

= ₹ 3.50 crore - ₹ 2.50 crore = ₹ 1 crore

And Rate of Return will be (3.5/2.5) - 1 = 0.40 is 40%

(ii) If the price of electricity decreases, then value of saving forever will be

At cost of Capital of 10%, the value of saving forever = $\frac{12 \text{ lakh}}{0.10}$

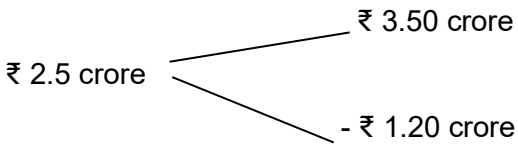
= ₹ 1.20 crore

The position of the NPV will be as follows:

= ₹ 1.20 crore - ₹ 2.5 crore = - ₹ 1.3 crore

and Rate of Return will be (1.2/2.5) - 1 = -0.52 i.e. – 52.00%

Diagrammatically it can be shown below



Let prob. of price increase be p. Then using Risk Neutral Method, the risk-free rate of return will be equal to expected saving as follows:

p x 0.40 + (1-p) (-0.52) = 0.08

0.40p - 0.52 + 0.52p = 0.08

0.92p = 0.60

p = 0.652

Hence, expected pay off = 0.652 x ₹ 1 crore + 0.348 x (- ₹ 1.30 crore) = ₹ 19.9 lakh.

PV of Pay off after one year = ₹ 19.96 lakh/ 1.08 = ₹ 18.48 lakh.

Thus, it shall be advisable to wait and see as NPV may turn out to be positive after one year.

(b) (i) Semi-annual fixed payment

= (N) (AIC) (Period)

Where N = Notional Principal amount = ₹ 5,00,000

AIC = All-in-cost = 8% = 0.08

$= 5,00,000 \times 0.08 \left(\frac{180}{360}\right)$

$= 5,00,000 \times 0.08\ (0.5)$

$= 5,00,000 \times 0.04$ = ₹ 20,000/-

(ii) Floating Rate Payment

$= N\ (LIBOR) \left(\frac{dt}{360}\right)$

$= 5,00,000 \times 0.06 \times \frac{181}{360}$

= 5,00,000 × 0.06 (0.503) or 5,00,000 × 0.06 (0.502777)

= 5,00,000 × 0.03018 or 5,00,000 × 0.030166 = ₹15,090 or 15,083

(iii) Net Amount

= (i) – (ii)

= ₹20,000 – ₹15,090 = ₹4,910

or = ₹ 20,000 – ₹ 15,083 = ₹ 4,917

6. (a) Calculation of NPV

Year	**0**	**1**	**2**	**3**
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696
Cash Flows in ₹ '000				
Real	-50000	-1500	-2000	-2500
Nominal (1)	-50000	-1650	-2420	-3327.50

Cash Flows in African Rand '000				
Real	-200000	50000	70000	90000
Nominal	-200000	70000	137200	246960
In Indian ₹'000 (2)	-33333	9167	14117	19965
Net Cash Flow in ₹ '000 (1) + (2)	-83333	7517	11697	16637
PVF@20%	1	0.833	0.694	0.579
PV	-83333	6262	8118	9633

NPV of 3 years = - 59320 (₹ '000)

NPV of Terminal Value = $\frac{16637}{0.20} \times 0.579 = 48164$ (₹ '000)

Total NPV of the Project = -59320 (₹ '000) + 48164 (₹ '000) = -11156 (₹ '000)

(b) (i) Expected Share Price

= ₹ 120 X 0.05 + ₹ 140 X 0.20 + ₹ 160 X 0.50 + ₹ 180 X 0.10 + ₹ 190 X 0.15

= ₹ 6 + ₹28 + ₹ 80 + ₹ 18 + ₹ 28.50 = ₹ 160.50

(ii) Value of Call Option

= ₹ 150 - ₹ 150 = Nil

(iii) If the option is held till maturity the expected Value of Call Option

Expected price (X)	Value of call(C)	Probability (P)	CP
₹ 120	0	0.05	0
₹ 140	0	0.20	0
₹ 160	₹ 10	0.50	₹ 5
₹ 180	₹ 30	0.10	₹ 3
₹ 190	₹ 40	0.15	₹ 6
Total			₹ 14

Alternatively, it can also be calculated as follows:

Expected Value of Option	
(120 – 150) X 0.1	Not Exercised*
(140 – 150) X 0.2	Not Exercised*
(160 – 150) X 0.5	5
(180 – 150) X 0.1	3
(190 – 150) X 0.15	6
	14

* If the stock price goes below ₹ 150, option is not exercised at all.