Mock Test Paper - Series II: August, 2025

Date of Paper: 05th August, 2025

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FINAL COURSE: GROUP – I

PAPER – 2: ADVANCED FINANCIAL MANAGEMENT

ANSWER TO PART – I CASE SCENARIO BASED MCQS

1. Option (a)

2. Option (b)

3 Option (c)

4. Option (c)

5. Option (d)

6. Option (b)

7. Option (c)

8. Option (b)

9. Option (c)

10. Option (a)

11. Option (b)

12. Option (c)

13. Option (b)

14. Option (d)

15. Option (b)

ANSWERS OF PART – II DESCRIPTIVE QUESTIONS

1. (a) (1) Yield from Investment in Equity Trading Index in Japan

Conversion of GBP 200 million in JPY (148.0002)	JPY 29600.04 Million
Dividend Income	JPY 1182.00 Million
Stock Lending	JPY 10.00 Million
Investment Value at End	JPY 29008.0392 Million

Amount available at End	JPY 30200.0392 Million
Forward Rate of 30.06.2019	JPY 150/ GBP
Amount to be Remitted back to London	GBP 201.3336 Million
Gain = 201.3336 – 200	GBP 1.3336 Million

(2) Fixed Income Desk of US

Conversion of GBP 200 million in USD (1.28000)	USD 256.00 Million
Add: Interest @ 5% p.a. for 6 months	USD 6.40 Million
Amount available at End	USD 262.40 Million
Forward Rate of 30.06.2019	USD 1.30331/ GBP
Amount to be Remitted back to London	GBP 201.3335 Million
Gain = 201.3335 – 200	GBP 1.3335 Million

Decision: Investment in Japanese Yen is preferred over the investment in USD G- Sec as there is a marginal gain. From a risk perspective, the company should go for Option-2 Investment in G-Secs as they are risk free.

(b) (i) The pay-off of each leg shall be computed as follows:

Cap Receipt

Max {0, [Notional principal x (LIBOR on Reset date – Cap Strike Rate) x (No. of days in settlement period/ 365)}

Floor Pay-off

Max {0, [Notional principal x (Floor Strike Rate – LIBOR on Reset date) x (No. of days in settlement period/ 365)}

Statement showing effective interest on each payment date

Reset Date	LIBOR (%)	Date of Payment	Days	Interest Payment (₹) LIBOR+0.50%	Cap Receipts (₹)	Floor Pay-off (₹)	Effective Interest
31-12-2018	7.00	30-06-2019	181	18,59,589	0	0	18,59,589
30-06-2019	8.00	31-12-2019	184	21,42,466	0	0	21,42,466
31-12-2019	6.00	30-06-2020	182	16,16,120	0	0	16,16,120
30-06-2020	4.75	31-12-2020	184	13,19,672	0	62,842	13,82,514
31-12-2020	4.25	30-06-2021	181	11,77,740	0	1,85,959	13,63,699
30-06-2021	5.25	31-12-2021	184	14,49,315	0	0	14,49,315
Total			1096				98,13,703

(ii) Average Annual Effective Interest Rate shall be computed as follows:

$$\frac{98,13,703}{5,00,00,000} \times \frac{365}{1096} \times 100 = 6.54\%$$

2. (a) Working Notes:

1. Computation of Annual Depreciation-

Particulars	₹
Purchase Price	26,00,000
Add: 1. Installation Charges	9,000
2. Fees Paid to Consultant for Advice	6,000
Total Cost of New Machine	26,15,000
Useful Life	8 Years
Annual Depreciation (Total Cost/No. of Years)	3,26,875

2. Computation of Annual Cash Savings-

Particulars	₹
Annual Earnings	3,15,000
Less-Tax @35%	1,10,250
Earning after Tax	2,04,750
Add-Depreciation on New Machine	3,26,875
Annual Cash Savings	5,31,625

3. Tax effect on sale of Old Machine-

Particulars	₹
Proceeds of Sale	12,500
Less- Cost of Removal	4,500
Net Proceeds	8,000
Less: WDV	76,000
Net Loss due to Sale	68,000
Tax savings due to Loss on Sale @35%	23,800
Total Cash Inflow due to Sale (₹ 8,000+₹ 23,800)	31,800

4. Computation of Net Present Value

Particulars	Period	Cash Flow (₹)	PVF @13%	PV (₹)
(a) Annual Cash inflow after Tax	1-8	5,31,625	4.8	25,51,800
(b) Net Salvage Value of Existing Machine	0	31,800	1.0	31,800
(c) Working Capital Realized	8	17,000	0.376	6,392
Present Value of Cash Inflows				25,89,992
Less: 1. Initial Investment	0	26,15,000	1.0	26,15,000
2. Initial Working Capital	0	17,000	1.0	17,000
NPV of the Proposal				(42,008)

Decision: Since NPV of the project is negative it is not viable.

(b) First of all, to calculate Cost of Equity we shall compute the Equity Beta of STR Ltd. as follows:

$$\beta_a = \beta_e \left[\frac{E}{E + D(1-t)} \right]$$

$$1.11 = \beta_e \left[\frac{250}{250 + 80(1-0.30)} \right]$$

β_e = 1.36

then we shall compute the Cost of Equity as per CAPM as follows:

k_e = R_f + β x Market Risk Premium

= 8.50% + 1.36 x 9%

= 8.50% + 12.24% = 20.74%

Cost of Debt (k_d) = 11%(1 – 0.30) = 7.70%

WACC (k_o) = $k_e \times \frac{E}{E+D} + k_d \times \frac{D}{E+D}$

$$= 20.74 \times \frac{250}{330} + 7.70 \times \frac{80}{330}$$

= 15.71 + 1.87 = 17.58%

Taxable Income = ₹ 50 Crore/(1 - 0.30)

= ₹ 7142.86 lakhs

Operating Income = Taxable Income + Interest

= ₹ 7142.86 lakhs + ₹ 880 lakhs

= ₹ 8022.86 lakhs

EVA = EBIT (1-Tax Rate) – WACC x Invested Capital

= ₹ 8022.86 lakhs (1 – 0.30) – 17.58% x ₹ 330 Crore

= ₹ 5616.00 lakhs – ₹ 5801.40 lakhs = - ₹ 185.40 lakhs

(c) Currency risk is dependent on the Government action and economic development. Some of the parameters to identity the currency risk are as follows:

(1) Government Action: The Government action of any country has visual impact in its currency. For example, the UK Govt. decision to divorce from European Union i.e. Brexit brought the pound to its lowest since 1980's.

(2) Nominal Interest Rate: As per interest rate parity (IRP) the currency exchange rate depends on the nominal interest of that country.

(3) Inflation Rate: Purchasing power parity theory discussed in later chapters impact the value of currency.

(4) Natural Calamities: Any natural calamity can have negative impact.

(5) War, Coup, Rebellion etc.: All these actions can have far reaching impact on currency's exchange rates.

(6) Change of Government: The change of government and its attitude towards foreign investment also helps to identify the currency risk.

3. (a) (i) Number of Units in each Scheme

MF 'X'	₹ 2,00,000 / ₹ 10.30	= 19,417.48
MF 'Y'	₹ 4,00,000 / ₹ 10.10	= 39,603.96
MF 'Z'	₹ 2,00,000 / ₹10.00	= 20,000.00

(ii) Total NAV on 31.03.2018

MF 'X'	= 19,417.48 x ₹ 10.25	₹ 1,99,029.17
MF 'Y'	= 39,603.96 x ₹ 10.00	₹ 3,96,039.60
MF 'Z'	= 20,000.00 x ₹ 10.20	₹ 2,04,000.00
Total		₹ 7,99,068.77

(iii) Total Yield

	Capital Yield	**Dividend Yield**	**Total**
MF 'X'	₹ 1,99,029.17- ₹ 2,00,000 = - ₹ 970.83	₹ 6,000	₹ 5,029.17
MF 'Y'	₹ 3,96,039.60 - ₹ 4,00,000 = - ₹ 3,960.40	Nil	- ₹ 3,960.40
MF 'Z'	₹ 2,04,000 - ₹ 2,00,000 = ₹ 4,000	₹ 5,000	₹ 9,000.00
Total			₹ 10,068.77

$$\text{Total Yield} = \frac{₹10,068.77}{₹\ 8,00,000} \times 100 = 1.2586\%$$

(iv) No. of Days Investment Held

	MF 'X'	**MF 'Y'**	**MF 'Z'**
Initial Investment (₹)	2,00,000	4,00,000	2,00,000
Yield (₹)	5,029.17	-3,960.40	9,000.00
Yield (%)	2.5146	- 0.9901	4.5
Period of Holding (Days)	$\frac{2.5146}{9.66} \times 365$ = 95 Days	$\frac{-0.9901}{-11.66} \times 365$ = 31 Days	$\frac{4.5}{24.15} \times 365$ = 68 Days
Date of Original Investment	27.12.17	01.03.18	23.01.18

Alternatively following dates can also be considered:

Date of Original Investment	26.12.17	28.02.18	22.01.18

(b) (i) When we make risk-return analysis of different securities from U to Z, we can observe that security U gives a return of 10% at risk level of 5%. Simultaneously securities V and Z give the same return of 10% as of

security U, but their risk levels are 6% and 7% respectively. Security X is giving only 5% return for the risk rate of 5%. Hence, security U dominates securities V, X and Z.

Securities W and Y offer more return but it carries higher level of risk.

Hence securities U, W and Y can be selected based on individual preferences.

(ii) In a situation where the perfect positive correlation exists between two securities, their risk and return can be averaged with the proportion.

Assuming the perfect correlation exists between the securities U and W, average risk and return of U and W together for proportion 4 : 1 is calculated as follows:

Risk = $(4 \times 5\% + 1 \times 13\%) \div 5 = 6.6\%$

Return = $(4 \times 10\% + 1 \times 15\%) \div 5 = 11\%$

Therefore:	80% U	100%Y
	20% V	_
Risk	6.6%	6%
Return	11%	11%

When we compare risk of 6.6% and return of 11% with security Y with 6% risk and 11% return, security Y is preferable over the portfolio of securities U and W in proportion of 4 : 1.

(c) The risk associated with the use blockchain technology are as follows:

(i) With the use of blockchain, organizations need to consider risks with a wider perspective as different members of a particular blockchain may have different risk appetite/risk tolerances that may further lead to conflict when monitoring controls are designed for a blockchain.

(ii) The reliability of financial transactions is dependent on the underlying technology and if this underlying consensus mechanism has been tampered with, it could render the financial information stored in the ledger to be inaccurate and unreliable.

(iii) In the absence of any central authority to administer and enforce protocol amendments, there could be a challenge in the development and maintenance of process control activities and in such case, users of public blockchains find difficult to obtain an understanding of the general IT

controls implemented and the effectiveness of these controls.

(iv) As blockchain involves humongous data getting updated frequently, risk related to information overload could potentially challenge the level of monitoring required.

OR

Various indicators are used to find out how the economy shall perform in the future. The indicators have been classified as under:

(i) Leading Indicators: They lead the economic activity in terms of their outcome. They relate to the time series data of the variables that reach high/low points in advance of economic activity.

(ii) Roughly Coincidental Indicators: They reach their peaks and troughs at approximately the same in the economy.

(iii) Lagging Indicators: They are time series data of variables that lag behind in their consequences vis-a- vis the economy. They reach their turning points after the economy has reached its own already.

4. (a) £ Exposure

Since Columbus has a £ receipt (£ 138,000) and payment of (£ 480,000) maturing at the same time i.e. 3 months, it can match them against each other leaving a net liability of £ 342,000 to be hedged.

(i) Forward market hedge

Buy 3 months' forward contract accordingly, amount payable after 3 months will be

£ 342,000 / 0.9520 = US$ 359,244

(ii) Money market hedge

To pay £ after 3 months' Columbus shall requires to borrow in US$ and translate to £ and then deposit in £.

For payment of £ 342,000 in 3 months (@2.5% interest) amount required to be deposited now (£ 342,000 ÷ 1.025) = £ 333,658

With spot rate of 0.9830 the US$ loan needed will be = US$ 339,429

Loan repayable after 3 months (@3.25% interest) will be = US$ 350,460

In this case the money market hedge is a cheaper option.

€ Receipt

Amount to be hedged = € 590,000

(i) Forward market hedge

Sell 4 months' forward contract accordingly, amount receivable after 4 months will be (€ 590,000 x1.9510) = US$ 1,151,090

(ii) Money market hedge

For money market hedge Columbus shall borrow in € and then translate to US$ and deposit in US$

For receipt of € 590,000 in 4 months (@ 5.33% interest) amount required to be borrowed now (€590,000 ÷ 1.0533) = € 560,144

With spot rate of 1.8890 the US$ deposit will be = US$ 1,058,113

Deposit amount will increase over 4 months (@3.83% interest) will be = US$ 1,098,639

In this case, more will be received in US$ under the forward hedge.

(b) Conversion Price = ₹ 50 x 17 = ₹ 850

Intrinsic Value = ₹ 850

Accordingly the yield (r) on the bond shall be :

₹ 850 = ₹ 100 PVAF (r, 10) + ₹ 1000 PVF (r, 10)

Let us discount the cash flows by 11%

850 = 100 PVAF (11%, 10) + 1000 PVF (11%, 10)

850 = 100 x 5.890 + 1000 x 0.352

= 91

Now let us discount the cash flows by 13%

850 = 100 PVAF (13%, 10) + 1000 PVF (13%, 10)

850 = 100 x 5.426 + 1000 x 0.295

= -12.40

Accordingly, IRR

$$11\% + \frac{90.90}{90.90 - (-12.40)} \times (13\% - 11\%)$$

$$11\% + \frac{90.90}{103.30} \times (13\% - 11\%)$$

= 12.76%

The spread from comparable bond = 12.76% - 11.80% = 0.96%

(c) Below are the four innovative sources of financing available for startups apart from traditional bank loans:

(i) **Peer-to-peer lending:** In this process a group of people come together and lend money to each other. Peer to peer lending has been there for many years. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavors.

(ii) **Crowdfunding:** Crowdfunding is the use of small amounts of capital from a large number of individuals to finance a new business initiative. Crowdfunding makes use of the easy accessibility of vast networks of people through social media and crowdfunding websites to bring investors and entrepreneurs together.

(iii) **Microloans:** Microloans are small loans that are given by individuals at lower interest rates to new business ventures. These loans can be issued by a single individual or aggregated across a number of individuals who each contribute a portion of the total amount.

(iv) **Vendor financing:** Vendor financing is the form of financing in which a company lends money to one of its customers so that he can buy products from the company itself. Vendor financing also takes place when many manufacturers and distributors are convinced to defer payment until the goods are sold. This means extending the payment terms to a longer period for e.g. 30 days payment period can be extended to 45 days or 60 days. However, this depends on one's credit worthiness and payment of more money.

5. **(a)** Working Notes:

(1) Inventory Turnover Ratio = $\frac{\text{COGS}}{\text{Closing Stock}}$

X Ltd.	Y Ltd.
$5 = \frac{\text{COGS}}{15,00,000}$	$4 = \frac{\text{COGS}}{5,00,000}$

COGS = ₹ 75,00,000	COGS = ₹ 20,00,000
Gross Profit Ratio = 20% means COGS is 80% of Sales, then	
Sales = $\frac{75,00,000\times100}{80}$ = ₹ 93,75,000	Sales = $\frac{75,00,000\times100}{80}$ = ₹ 25,00,000

Statement of Profit

	X Ltd.	Y Ltd.
Sales	93,75,000	25,00,000
Less: Operating Exp.	80,62,500	19,50,000
EBIT	13,12,500	5,50,000
Less: Interest	1,20,000	1,44,000
EBT	11,92,500	4,06,000
Less: Tax@30%	3,57,750	1,21,800
EAT	8,34,750	2,84,200

(2)

	X Ltd.	Y Ltd.
No. of Shares	1,00,000	60,000
EPS (EAT/ No. of Shares)	8,34,750/1,00,000 = ₹ 8.34	2,84,200/60,000 = ₹ 4.74
Market Price Share (Market Capitalisation/ No. Shares)	75,00,000/ 1,00,000 = ₹ 75	90,00,000/ 60,000 = ₹ 150
PE Ratio (MPS/ EPS)	75/ 8.34 = 8.99	150/ 4.74 = 31.65

(i) Swap Ratio = $\frac{\text{Target Co.}}{\text{Acquirer Co.}}$

	Acquirer Co. X Ltd.	Target Co. Y Ltd.	Weight
EPS	0.34	4.74	00.40
MPS	75	150	0.60

EPS	$\frac{4.74}{8.34}$ × 0.40 =	0.227

MPS	$\frac{150}{75} \times 0.60$	1.200
		1.427

(ii) Post Merger EPS

$$= \frac{EAT_X + EAT_Y}{\text{No. of Shares of Both Cos.}}$$

$$= \frac{834750 + 284200}{1,00,000 + (60,000 \times 1.227)}$$

$$= \frac{1118950}{1,85,620}$$

= 6.03

(iii) Post Merger market price assuming same PE of X Ltd.

MPS = PE x EPS

= 8.99 x 6.03

= ₹ 54.21

(iv) Gain or Loss to the share holders

	Pre-Merger EPS	Post Merger EPS
X Ltd.	₹ 8.34	₹ 6.99
Y Ltd.	₹ 4.74	₹ 6.99 x 1.427 = ₹ 9.97

While Shareholders of X Ltd. will lose EPS of ₹ 1.35 (₹ 8.34 - ₹ 6.99) per share the shareholders of Y Ltd. stands to gain EPS of ₹ 5.23 (₹ 9.97 - ₹ 4.74) per share.

(b) (i) Mr. X's position in the two securities are +1.50 in security A and -0.5 in security B. Hence the portfolio sensitivities to the two factors:

b prop. 1 =1.50 x 0.80 + (-0.50 x 1.50) = 0.45

b prop. 2 = 1.50 x 0.60 + (-0.50 x 1.20) = 0.30

(ii) Mr. X's revised position:

Security A ₹ 3,00,000 / ₹ 1,00,000 = 3

Security B -₹ 1,00,000 / ₹ 1,00,000 = -1

Risk free asset -₹ 100000 / ₹ 100000 = -1

b prop. 1 = 3.0 x 0.80 + (-1 x 1.50) + (- 1 x 0) = 0.90

b prop. 2 = 3.0 x 0.60 + (-1 x 1.20) + (-1 x 0) = 0.60

(iii) Expected Return = Risk Free Rate of Return + Risk Premium

Let λ_1 and λ_2 are the Value Factor 1 and Factor 2 respectively.

Accordingly

$15 = 10 + 0.80\ \lambda_1 + 0.60\ \lambda_2$

$20 = 10 + 1.50\ \lambda_1 + 1.20\ \lambda_2$

On solving equation, the value of $\lambda_1 = 0$, and risk premium of factor 2 for Securities A & B shall be as follows:

Using Security A's Return

Total Return = $15\% = 10\% + 0.60\ \lambda_2$

Risk Premium (λ_2) = 5%/ 0.60 = 8.33%

Alternatively using Security B's Return

Total Return = $20\% = 10 + 1.20\ \lambda_2$

Risk Premium = 10%/ 1.20 = 8.33%

6. (a) (i) Calculation of Bond Duration

Bond A

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	10	0.917	9.17	0.086	0.086
2	10	0.842	8.42	0.079	0.158
3	10	0.772	7.72	0.073	0.219
4	10	0.708	7.08	0.067	0.268
5	10	0.650	6.50	0.061	0.305
6	10	0.596	5.96	0.056	0.336
7	10	0.547	5.47	0.051	0.357
8	10	0.502	5.02	0.047	0.376
9	10	0.460	4.60	0.043	0.387

10	110	0.4224	46.46	0.437	4.370
			106.40	1.000	6.862

Duration of the bond is 6.862 years or 6.86 year.

Bond B

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	11	0.917	10.087	0.091	0.091
2	11	0.842	9.262	0.083	0.166
3	11	0.772	8.492	0.076	0.228
4	11	0.708	7.788	0.070	0.280
5	11	0.650	7.150	0.064	0.320
6	11	0.596	6.556	0.059	0.354
7	11	0.547	6.017	0.054	0.378
8	111	0.502	55.772	0.502	4.016
			111.224	1.000	5.833

Duration of the bond B is 5.833 years or 5.84 years.

Bond C

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	9	0.917	8.253	0.082	0.082
2	9	0.842	7.578	0.076	0.152
3	9	0.772	6.948	0.069	0.207
4	9	0.708	6.372	0.064	0.256
5	109	0.650	70.850	0.709	3.545
			100.00	1.000	4.242

Duration of the bond C is 4.242 years or 4.24 years.

(ii) Amount of Investment required in Bond B and C

Period required to be immunized	6.000 Year
Less: Period covered from Bond A	3.087 Year
To be immunized from B and C	2.913 Year

Let proportion of investment in Bond B and C is b and c respectively then

$b + c = 0.55$ (1)

$5.883b + 4.242c = 2.913$ (2)

On solving these equations, the value of b and c comes 0.3534 or 0.3621 and 0.1966 or 0.1879 respectively and accordingly, the % of investment of B and C is 35.34% or 36.21% and 19.66 % or 18.79% respectively.

(iii) With revised yield the Revised Duration of Bond stands

0.45 x 7.15 + 0.36 x 6.03 + 0.19 x 4.27 = 6.20 year

No portfolio is not immunized as the duration of the portfolio has been increased from 6 years to 6.20 years.

(iv) New percentage of B and C bonds that are needed to immunize the portfolio.

Period required to be immunized	6.0000 Year
Less: Period covered from Bond A	3.2175 Year
To be immunized from B and C	2.7825 Year

Let proportion of investment in Bond B and C is b and c respectively, then

$b + c = 0.55$

$6.03b + 4.27c = 2.7825$

$b = 0.2466$

On solving these equations, the value of b and c comes 0.2466 and 0.3034 respectively and accordingly, the % of investment of B and C is 24.66% or 25% and 30.34 % or 30.00% respectively.

(b) (i) If company borrows in $ then outflow would be as follows:

Let company borrows $ 100	$ 100.00
Add: Interest for 6 months @ 5.5%	$ 2.75
Amount Repayable after 6 months	$ 102.75
Applicable 6 month forward rate	86.40
Amount of Cash outflow in Indian Rupees	₹ 8,877.60

If company borrows equivalent amount in Indian Rupee, then outflow would be as follows:

Equivalent ₹ amount ₹ 86.10 x 100	₹ 8,610.00
Add: Interest @11.50% for months	₹ 495.08
	₹ 9,105.08

Since cash outflow is more in ₹ borrowing then borrowing should be made in $.

(ii) (a) Let 'i_r' be the interest rate of ₹ borrowing make indifferent between 3 months borrowings and 6 months borrowing then

$(1 + 0.03)(1 + i_r) = (1 + 0.0575)$

i_r= 2.67% or 10.68% (on annualized basis)

(b) Let 'i_d' be the interest rate of $ borrowing after 3 months to make indifference between 3 months borrowings and 6 months borrowings. Then,

$(1 + 0.015)(1 + i_d) = (1 + 0.0275)$

i_d = 1.232% or 4.93% (on annualized basis)