(ii) Additional cash fixed cost will be US $ 30 million p.a. and project's share of allocated fixed cost will be US $ 3 million p.a. based on principle of ability to share;

(iii) Production capacity of the proposed project in India will be 5 million units;

(iv) Expected useful life of the proposed plant is five years with no salvage value;

(v) Existing working capital investment for production & sale of two million units through exports was US $ 15 million;

(vi) Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India;

(vii) Applicable Corporate Income Tax rate is 35%, and

(viii) Required rate of return for such project is 12%.

Assuming that there will be no variation in the exchange rate of two currencies and all profits will be repatriated, as there will be no withholding tax, estimate Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for five years are as below:

Year	**1**	**2**	**3**	**4**	**5**
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

(SM TYK – 04 & Exam May – 2014) (8 Marks)

Solution:

W.N. 1: CFAT (Millions)

Sales [5 million × $ 80]	$ 400	
(-) VC [5 million × $ 20]	$ 100	
(-) additional FC	$ 30	
CFBT	$ 270	.....(i)

(-) Dep $\left(\frac{\$\ 500}{5}\right)$	$ 100	
PBT	$ 170	
Tax @ 33%	$ 59.5	.....(ii)
CFAT (i – ii)	$ 210.5	

CFAT (Export)

Sales [1.5 × $ 80]	$ 120	
(-) VC (1.5 × $ 40)	$ 60	
CFBT	$ 60	
Tax @ 35%	$ 21	
CFAT	$ 39	

Incremental CFAT ($ 210.50 – $ 39) = $ 171.50

Calculation of NPV

(Millions)

	Year	PVF	Amount	P.V.
(A) Incremental cash outflow				
Cost of plant	0	1.000	$ 500	$ 500
Working capital ($ 50 - $15)	0	1.000	$ 35	$ 35
Total				**$ 535**
(B) Incremental cash inflow				
Incremental CFAT (WN 1)	1-5	3.6048	$ 171.50	$ 618.22
WC recovered (Incremental)	5	0.5674	$ 35	$ 19.859
Total				**$ 638.079**
NPV (B-A)				$ 103.079

Since NPV is positive hence project should be accepted.

Question – 08

A US company wants to setup a manufacturing plant in India which requires an initial outlay of ₹ 8 Million. It is expected to have a useful life of 5 years with

a salvage of ₹ 2 Million. The company follows straight line method of depreciation. To support additional level of activity, investment would require one time additional working capital of ₹ 1 Million.

Since the cost of production lower in India, the variable cost of production would be ₹ 30 per unit. Additional fixed cost per annum is estimated at ₹ 0.5 Million. The company is projecting its annual sales to 80000 units at the price of ₹ 100 per unit. Applicable tax rate to the company is 34% and its cost of capital is 8%.

Inflation rates in US and India are expected to be 8% and 9% respectively. The current exchange rate is ₹ 72 per US Dollar.

Assuming that all profit will be repatriated every year and there will be no withholding taxes, estimate the net present value of the proposed project in India and evaluate its feasibility.

PVF @ 8% for the five years are as under:

Rate	1 Year	2 Year	3 Year	4 Year	5 Year
8%	0.926	0.857	0.794	0.735	0.681

(Exam December – 2021) (8 Marks)

Solution:

Forward Rate

1 year $= ₹ 72 \times \frac{1.09}{1.08} = 72.67$

2 year $= 72.67 \times \frac{1.09}{1.08} = 73.34$

3 year $= 73.34 \times \frac{1.09}{1.08} = 74.02$

4 year $= 74.02 \times \frac{1.09}{1.08} = 74.71$

5 year $= 74.71 \times \frac{1.09}{1.08} = 75.40$

W.N. 2: CFAT (₹)

Sales (80,000 units × 100)	= 80,00,000
VC (80,000 × 30)	= 24,00,000
FC	= 5,00,000
CFBT (i)	= 51,00,000
(-) Dep $\left(\frac{80,00,000-20,00,000}{5}\right)$	= 12,00,000
PBT	= 39,00,000
Tax @ 34% (ii)	= 13,26,000
CFAT (i – ii)	= 37,74,000

NPV

	0	1	2	3	4	5
Cost of plant	- 80,00,000	-	-	-	-	-
Working capital	- 10,00,000	-	-	-	-	+ 10,00,000
Salvage	-	-	-	-	-	+ 20,00,000
CFAT	-	+ 37,74,000	37,74,000	37,74,000	37,74,000	37,74,000
CF (₹)	- 90,00,000	37,74,000	37,74,000	37,74,000	37,74,000	67,74,000
Exchange rate	72	72.67	73.34	74.02	74.71	75.40
CF ($)	- 1,25,000	51,933.40	51,458.96	50,986.22	50,515.32	89,840.85
(×) PVF	1.000	0.926	0.857	0.794	0.735	0.681

NPV = $ 1,05,984.09 Accept.

Question – 09

A USA based company is planning to set up a software development unit in India. Software developed at the Indian unit will be bought back by the US parent at a transfer price of US $10 millions. The unit will remain in existence in India for one year; the software is expected to get developed within this time frame.

The US based company will be subject to corporate tax of 30 per cent and a withholding tax of 10 per cent in India and will not be eligible for tax credit in

the US. The software developed will be sold in the US market for US $ 12.0 millions. Other estimates are as follows:

Rent for fully furnished unit with necessary hardware in India ₹ 15,00,000

Man power cost (80 software professional will be working for 10 hours each day) ₹ 400 per man hour

Administrative and other costs ₹ 12,00,000

Advise the US Company on the financial viability of the project. The rupee-dollar rate is ₹48/$.

Note: Assume 365 days a year.

(SM TYK – 02, RTP Nov – 2021 & Exam May – 2017) (8 Marks)

Solution:

Cost of Software in India

Rent	₹ 15,00,000
Manpower (80 × 10 × 400 × 365)	₹ 11,68,00,000
Administration	₹ 12,00,000
Cost	₹ 11,95,00,000

Tax Amount

Sales ($ 1,00,00,000 × 48)	₹ 48,00,00,000
(-) Cost	₹ 11,95,00,000
Profit	₹ 36,05,00,000
Tax @ 30%	₹ 10,81,50,000

Total Cost of Software

= ₹ 11,95,00,000 + 10,81,50,000

= ₹ 22,76,50,000

In $ = $\frac{₹\ 22,76,50,000}{48}$

= $ 4.743 Millions

Software will be sold at $ 12 Millions & Cost is 4.743 Millions hence Project Should be Accepted.

Question – 10

VK Ltd. is an Indian company which is planning to set up a manufacturing plant through its subsidiary in the small country Farland, (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The currency of Farland is the Farroh (Fr.).

An initial investment of Fr. 80 million in plant and machinery would be required. In addition to that the initial investment in working capital of Fr. 6 million would be also required which shall be financed through a loan from a local bank of Farland, at interest rate of 10% p.a.The working capital shall also be subject to inflation. At the end of 5 years, the subsidiary would be taken over by the Govt. of Farland for a price of Fr. 2 million. The part of the proceeds would be used to pay off the bank loan.

It is expected that subsidiary shall produce Net Cash Flows from Operations of Fr. 30 million per year at current price level over the five-year period, before allowing for Farland inflation of 8% per year. Depreciation on Plant and Machinery shall be charged at 20% per year on straight line basis. As a result of setting up the subsidiary, VK Ltd. expects to lose after-tax export income from Farland of INR 8,00,000 per year in current price terms, before allowing for India inflation of 3%. Profits in Farland are taxed at a rate of 20% after allowing deduction for interest and depreciation. All after-tax cash profits are remitted to the India at the end of each year. Indian tax @ 30% is charged on profit earned, but due to tax treaty between Farland and the India the tax paid in Farland is allowed to be set off against any India Tax liability. Taxation is paid in the year in which the liability arises. VK Ltd. requires foreign investments to be discounted at 12%. The current exchange rate is Fr.2.5/INR and the Farroh is expected to depreciate against INR by 5% per year.

Advise should VK Ltd. undertake the investment in Farland or not.

Note:-

1. Present Figures in thousands multiple.

2. Round off all calculations.

3. PVF @12%

Year	1	2	3	4	5
PVF	0.893	0.797	0.712	0.636	0.567

(MTP October – 2023)

Solution:

(i) Forward Rate

Fr/₹ = 2.5

1 year = 2.5 × 1.05 = 2.625

2 year = 2.625 × 1.05 = 2.7563

3 year = 2.7563 × 1.05 = 2.8941

4 year = 2.8941 × 1.05 = 3.0388

5 year = 3.0388 × 1.05 = 3.1907

CFAT (Fr '000')

	1	2	3	4	5
EBITDA (30,000)	32,400	34,992	37,791	40,815	44,080
(–) Depreciation	16,000	16,000	16,000	16,000	16,000
(–) Interest (6,000 × 10%)	600	600	600	600	600
PBT	15,800	18,392	21,191	24,215	27,480
Tax @ 20%	3,160	3,678	4,238	4,843	5,496
PAT	12,640	14,714	16,953	19,372	21,984
(+) Depreciation	16,000	16,000	16,000	16,000	16,000
CFAT (Fr)	28,640	30,714	32,953	35,372	37,984

WC Requirement

	0	1	2	3	4	5
WC	6,000	6,480	6,998	7,558	8,163	---
Additional WC (Fr)	---	480	518	560	605	---

("000")

	0	1	2	3	4	5
Cost (Fr)	(80,000)	---	---	---	---	---
CFAT	---	28,640	30,714	32,953	35,372	37,984
Additional WC	---	(480)	(518)	(560)	(605)	---
Salvage	---	---	---	---	---	2,000
Recovered WC	---	---	---	---	---	2,163
CF (Fr)	-80,000	28,160	30,196	32,393	34,767	42,147
Exchange Rate (Fr/₹)	2.5	2.625	2.7563	2.8941	3.0388	3.1907
CF (₹)	-32,000	10,728	10,955	11,193	11,441	13,209
(-) Tax	---	(602)	(667)	(732)	(797)	(861)
Loss of Export	---	(824)	(849)	(874)	(900)	(927)
CFAT	-32,000	9,302	9,439	9,587	9,744	11,421
PVF	1.000	0.893	0.797	0.712	0.636	0.567

NPV = 3,328

Working Tax in India

	1	2	3	4	5
PBT (Fr)	15,800	18,392	21,191	24,215	27,480
Exchange Rate Fr/₹	2.625	2.7563	2.8941	3.0388	3.1907
PBT (₹)	6,019	6,673	7,322	7,969	8,613
Tax @ 10%	602	667	732	797	861

ICAI SOLUTION:

Working Notes:

(1) Calculation of the project cash flows for VK Ltd.'s subsidiary in Farland

Fr.'000

Year	0	1	2	3	4	5
Cash flow from operating		32,400	34,992	37,791	40,815	44,080
Depreciation		16,000	16,000	16,000	16,000	16,000
Interest		600	600	600	600	600
Profit after tax		15,800	18,392	21,191	24,215	27,480
Farland tax		3,160	3,678	4,238	4,843	5,496
Profit after tax		12,640	14,714	16,953	19,372	21,984
Add back depreciation		16,000	16,000	16,000	16,000	16,000
		28,640	30,714	32,953	35,372	37,984
Initial investment	-80,000					

Change in W.C.		-480	-518	-560	-605	-653
Loan capital						-6000
Sales on Subsidiary	---	---	---	---	---	2000
	-80000	28160	30196	32393	34767	33331

(2) Expected Exchange Rates

Year	Rate
0	2.50
1	$2.50 \times 1.05 = 2.63$
2	$2.50 \times (1.05)^2 = 2.76$
3	$2.50 \times (1.05)^3 = 2.89$
4	$2.50 \times (1.05)^4 = 3.04$
5	$2.50 \times (1.05)^5 = 3.19$

(3) Calculation of Tax paid in India

Year	1	2	3	4	5
PBT (fr)	15,800	18,392	21,191	24,215	27,480
Tax @ 10 %	1,580	1,839	2,119	2,422	2,748
Exchange Rate	2.63	2.76	2.89	3.04	3.19
Tax in India (INR' 000)	601	666	733	797	861

Calculation Net Present Value (NPV) for VK Ltd.'s subsidiary at parent company level

Year	0	1	2	3	4	5
Project cash flow (Fr.'000)	-80,000	28,160	30,196	32,393	34,767	33,331
Exchange Rate (Fr./INR)	2.50	2.63	2.76	2.89	3.04	3.19
Cash Invested from India (INR '000)	-32,000	--	--	--	--	--
Cash Received in India (INR '000)	--	10,707	10,941	11,209	11,437	10,449
Tax in India (INR '000)		601	666	733	797	861
	-32,000	10,106	10,275	10,476	10,640	9,588
Lost export after tax (INR '000)		824	849	874	900	927
Parent Cash Flow	-32,000	9,282	9,426	9,602	9,740	8,661
PVF	1	0.893	0.797	0.712	0.636	0.567
	-32,000	8,289	7,513	6,837	6,195	4,911

NPV	1,745

Decision: Since NPV of the project is positive it should be accepted.

Question – 11

Mr. Vishwas, a friend of Mr. Pramod who is one of the Directors of Ashirwad Limited, is a citizen of Mauritius. His immediate family members including his parents, born in India are residing in India. He has many friends in different parts of India, due to which he happens to visit India on frequent basis. He along with Mr. Pramod evince interest in setting up business in India and formally incorporate a company to commence their operations. Accordingly, a company is called "Aerious Private Ltd." got incorporated in Mumbai.

To start with he received a business proposal from one of his friends Nimish a consultant. It is estimated that in equivalent terms the business shall require an initial investment of MUR 100 Million and thereafter MUR 2 Million each year will be needed as working capital fund.

He wished to evaluate whether the business proposal is viable or not. The information related to exchange rate and inflation rate is as follows:

Spot Rate for 1 Mauritian Dollar (MUR) = 1.88 Indian Rupee (INR)

The inflation in India is 6% and in Mauritius is 5%.

It is expected that this inflation rate will remain unchanged for the next 4 years.

INR 8 Crore out of initial investment shall be required for setting up a plant. The useful life of the plant is 4 years. At the end of 4th year estimated salvage value of this plant shall be INR 80 lakhs. Depreciation of the plant shall be charged on the basis of straight-line method.

40 % of the investment shall be through debt funds from Mauritius at the cost of 10% (post tax) while remaining funds shall be arranged by him and his friends. They expect a rate of return of 12% on their funds.

Expected revenues & costs (excluding depreciation) in real term are as under:

Year	1	2	3	4
Revenues (₹ Crore)	6.00	7.00	8.00	8.00
Costs (₹ Crore)	3.00	4.00	4.00	4.00

Assume that applicable tax rate in India is 30%. Since there is Double tax avoidance agreement between India and Mauritius, the company is not required to pay tax in Mauritius if tax has been paid in India.

The applicable inflation rates for revenues & costs are as follows:

Year	Revenues	Costs
1	10%	12%
2	9%	10%
3	8%	9%
4	7%	8%

He wants an expert opinion for the same investment proposal.

Demonstrate whether investment in this project is viable option or not.

Note:

1. Round off calculations upto 4 decimal points.

2. Show INR calculations in Crore and MUR calculations in Million.

Solution:

(i) Forward Rate

1. $= ₹\ 1.88 \times \frac{1.06}{1.05} = 1.8979$

2. $= ₹\ 1.8979 \times \frac{1.06}{1.05} = 1.9160$

3. $= ₹\ 1.9160 \times \frac{1.06}{1.05} = 1.9342$

4. $= ₹\ 1.9342 \times \frac{1.06}{1.05} = 1.9526$

(ii) Nominal Cash Flows

Revenue:

1. 6×1.10 = 6.60 Cr.

2. $7 \times 1.10 \times 1.09$ = 8.393 Cr.

3. $8 \times 1.10 \times 1.09 \times 1.08$ = 10.3594 Cr.

4. $8 \times 1.10 \times 1.09 \times 1.08 \times 1.07$ = 11.0845 Cr.

Cost:

1. 3×1.12 = 3.36 Cr.

2. $4 \times 1.12 \times 1.10$ = 4.928 Cr.

3. $4 \times 1.12 \times 1.10 \times 1.09$ = 5.3715 Cr.

4. $4 \times 1.12 \times 1.10 \times 1.09 \times 1.08$ = 5.8012 Cr.

(iii) Calculation of CFAT (₹)

	1	2	3	4
Revenue	6.60	8.393	10.3594	11.0845
(-) Cost	3.36	4.928	5.3715	5.8012
CFBT (i)	3.24	3.465	4.9879	5.2833
(-) Depreciation $\frac{8-0.8}{4}$	1.80	1.80	1.80	1.80
PBT	1.44	1.665	3.1879	3.4833
Tax @ 30% (ii)	0.4320	0.4995	0.9564	1.0450
CFAT [(i) – (ii)]	2.808	2.9655	4.0315	4.2383

(iv) Calculation of Working Capital (₹)

1st Year	MUR 2m × 1.8979	= 0.3796 Cr.
2nd Year	MUR 2m × 1.9160	= 0.3832 Cr.
3rd Year	MUR 2m × 1.9342	= 0.3868 Cr.
4th Year	MUR 2m × 1.9526	= 0.3905 Cr.
Total Working Capital		= 1.5401 Cr.

(v) WACC

WACC = $(0.4 \times 10) + (0.6 \times 12)$

= 11.2%

(vi) Calculation of NPV

	0	1	2	3	4
Initial investment	- 18.80	---	---	---	---
Working capital	---	-0.3796	- 0.3832	- 0.3868	- 0.3905
WC recovered	---	---	---	---	+ 1.5401
Salvage	---	---	---	---	+ 0.8000
CFAT	---	2.808	2.9655	4.0315	4.2383
Total (₹)	-18.80	2.4284	2.5823	3.6447	6.1879
Exchange rate	1.88	1.8979	1.9160	1.9342	1.9526
Total CF (MUR)	-100	12.7952	13.4776	18.8434	31.6906
PVT @ 11.2%	1	0.8993	0.8087	0.7273	0.6540

NPV = - 43.1635 Reject

Question – 12

A proposed foreign investment involves creation of a plant with an annual output of 1 million units. The entire production will be exported at a selling price of USD 10 per unit.

At the current rate of exchange dollar cost of local production equals to USD 6 per unit. Dollar is expected to decline by 10% or 15%. The change in local cost of production and probability from the expected current level will be as follows:

Decline in value of USD (%)	Reduction in local cost of production (USD/unit)	Probability
0	-	0.4
10	0.30	0.4
15	0.15 Additional reduction	0.2

The plant at the current rate of exchange will have a depreciation of USD 1 million annually. Assume local Tax rate as 30%.
You are required to find out:

(i) Annual Cash Flow After Tax (CFAT) under all the different scenarios of exchange rate.

(ii) Expected value of CFAT assuming no repatriation of profits.

(iii) Viability of the investment proposal assuming an initial investment of USD 25 million on plant and working capital with a required rate of

return of 11% on investment and on the basis of CFAT arrived under option (ii). The CFAT will grow @ 3% per annum in perpetuity.

(Exam January – 2021) (8 Marks)

Solution:

(i) Calculation of CFAT

	I	II	III
Sales (10,00,000 × 10)	1,00,00,000	1,00,00,000	1,00,00,000
(-) Cost of Production	60,00,000	57,00,000	55,50,000
CFBT (i)	40,00,000	43,00,000	44,50,000
- Depreciation	10,00,000	9,00,000	8,50,000
PBT	30,00,000	34,00,000	36,00,000
Tax @ 30%(ii)	9,00,000	10,20,000	10,80,000
CFAT (i – ii)	31,00,000	32,80,000	33,70,000

(ii) Expected CFAT

= (31,00,000 × 0.4) + (32,80,000 × 0.4) + (33,70,000 × 0.2)

= $ 32,26,000

(iii) Calculation of NPV

$$\text{PVCI} = \frac{\text{CFAT 1}}{K_e - g}$$

$$= \frac{\$\ 32{,}26{,}000\ (1.03)}{0.11 - 0.03}$$

= $ 4,15,34,750

NPV = 4,15,34,750 – $ 25,00,000

= $ 1,65,34,750

Since NPV is positive hence Project should be accepted.

PART II: ADR & GDR

Question – 13

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 though a GDR issue. It considers the following factors in pricing the issue:

(i) The expected domestic market price of the share is ₹ 300

(ii) 3 shares underly each GDR

(iii) Underlying shares are priced at 10% discount to the market price

(iv) 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%.

(Exam Nov – 2014) (8 Marks)

Solution:

Net Issue Size = $15 million

Gross Issue $= \frac{\$15 \text{ million}}{0.98} = \$15.306 \text{ million}$

Issue Price per GDR in ₹ (300 × 3 × 90%)	₹ 810
Issue Price per GDR in $ (₹ 810/ ₹ 60)	$13.50
Dividend Per GDR (D1) = ₹ 2* × 3 =	₹ 6

* Assumed to be on based on Face Value of ₹ 10 each share.

Net Proceeds Per GDR = ₹ 810 × 0.98 = ₹ 793.80

(a) Number of GDR to be issued

$$\frac{\$15.306 \text{ million}}{\$13.50} = 1.1338 \text{ million}$$

(b) Cost of GDR to Odessa Ltd

$$K_e = \frac{6.00}{793.80} + 0.20 = 20.76\%$$

Question – 14

M/s. Raghu Ltd. is interested in expanding its operation and planning to install manufacturing plant at US. It requires 8.82 million USD (net of issue expenses/ floatation cost) to fund the proposed project. GDRs are proposed to be issued to finance this project. The estimated floatation cost of GDRs is 2%.

Additional information:

(i) Expected market price of share at the time of issue of GDR is ₹ 360 (Face Value ₹ 100)

(ii) Each GDR will represent two underlying Shares.

(iii) The issue shall be priced at 10% discount to the market price.

(iv) Expected exchange rate is INR/USD 72.

(v) Dividend is expected to be paid at the rate of 20% with growth rate of 12%.

Requirement:

(1) You, as a financial consultant, are required to compute the number of GDRs to be issued and cost of the GDR.

(2) What is your suggestion if the company receives an offer from a US Bank willing to provide an equivalent loan with an interest rate of 12%?

(3) How much company can save by choosing the option as recommended by you?

(RTP May – 2022, MTP April – 2022 & Exam July - 2021) (8 Marks)

Solution:

(1) No. of GDR & Cost of GDR

Gross Issues $= \frac{\$ 8.82 \text{ m}}{0.98}$

$= 9$ Million

Price of GDR $= 360 \times 20 \times 90\%$

$= ₹ 648$

$$= \frac{648}{72} = \$\ 9$$

No. of GDR $$= \frac{\$9 \text{ million}}{\$9} = 1 \text{ million}$$

Cost of GDR $$= \frac{₹\ 100 \times 20\% \times 2}{648 \times 98\%} + 0.12$$

$$= 18.30\%$$

(2) Since equivalent loan Interest is 12% i.e. less than Cost of GDR (18.30%) then it is better to accept US Bank Offer

(3) Savings

= 18.30% – 12%

= 6.30%

PART III: ADJUSTED PRESENT VALUE

Question – 15

XYZ Ltd. is presently all equity financed. The directors of the company have been evaluating investment is a project which will require ₹ 270 lakhs capital expenditure on new machinery. They expect the capital investment to provide annual cash flows of ₹ 42 lakhs indefinitely which is net of all tax adjustments. The discount rate which it applies to such investment decisions is 14% net.

The directors of the company believe that the current capital structure fails to take advantage of tax benefits of debt, and propose to finance the new project with undated perpetual debt secured on the company's assets. The company intends to issue sufficient debt to cover the cost of capital expenditure and the after tax cost issue.

The current annual gross rate of interest required by the market on corporate undated debt of similar risk is 10%. The after tax costs of issue are expected to be ₹ 10 lakh. Company's tax rate is 30%.

Your are required to calculate The adjusted present value of the investment.

Solution:

Calculation of Adjusted Present Value of Investment (APV)

Adjusted PV

= Base Case PV + PV of financing decisions associated with the project

Base Case NPV for the project:

(-) ₹ 270 lakhs + (₹ 42 lakhs/0.14)	= (-) ₹ 270 lakhs + ₹ 300 lakhs
	= ₹ 30
Issue costs	= ₹ 10 lakhs
Thus, the amount to be raised	= ₹ 270 lakhs + ₹ 10 lakhs
	= ₹ 280 lakhs
Annual tax relief on interest payment	= ₹ 280 × 0.1 × 0.3
	= ₹ 8.4 lakhs in perpetuity
The value of tax relief in perpetuity	= ₹ 8.4 lakhs/0.1
	= ₹ 84 lakhs

Therefore, APV

= Base case PV – Issue Costs + PV of Tax Relief on debt interest

= ₹ 30 lakhs – ₹ 10 lakhs + 84 lakhs

= ₹ 104 lakhs

Question – 16

The Management of a multinational company TL Ltd. is engaged in construction of Infrastructure Project. A proposal to construct a Toll Road in Nepal is under consideration of the Management.

The following information is available:

- The initial investment will be in purchase of equipment costing USD 250 lakhs. The economic life of the equipment is 10 years. The depreciation on the equipment will be charged on straight line method.

- EBIDTA to be collected from the Toll Road is projected to be USD 33 lakhs per annum for a period of 20 years.

- To encourage investment Nepalese government is offering a 15-year term loan of USD 150 lakhs at an interest rate of 6 per cent per annum. The interest is to be paid annually. The loan will be repaid at the end of 15 year in one tranche.
- The required rate of return for the project under all equity financing is 12 per cent per annum.
- Post tax cost of debt is 5.6 per cent per annum.
- Corporate Tax Rate is 30 per cent.
- All cash Flows will be in USD.

You are required to advise the management of TL Ltd. on the viability of the proposal by using Adjusted Net Present Value method. Ignore inflation.

Given

PVIFA (12%, 10) = 5.650, PVIFA (12%, 20) = 7.469, PVIFA (8%,15) = 8.559, PVIF (8%, 15) = 0.315.

Note: Make calculations in USD Lakhs and round off them upto 3 decimal points.

(RTP November – 2024)

Solution:

(i) Net Present Value (All Equity Financed) – Base NPV

Particulars	Period	USD Lakhs	PVF @ 12%	PV (USD Lakhs)
Initial Investment	0	(250.00)	1.000	(250.000)
EBIDTA	1 to 20	33.00	7.469	246.477
Tax	1 to 20	(9.90)	7.469	(73.943)
Depreciation	1 to 10	(25.00)		
Tax Saving on Dep.	1 to 10	7.50	5.650	42.375
NPV				(35.091)

(ii) Present Value of Impact of Financing by Debt

Particulars	Period	USD Lakhs	PVF @ 8%	PV (USD Lakhs)
Tax Saving on Interest	1 to 15	2.70	8.559	23.109

Adjusted Present Value of the Project

Base NPV + PV of Tax Shield on Interest

= - US$ 35.091 + US $ 23.109 lakh

= - US$ 11.982 lakh

Advise: Since APV is negative, TL Ltd. should not accept the project.

ADDITIONAL QUESTIONS

Question – 01

PQR Ltd. is considering a project in US, which involve an initial investment of ₹ 124.50 Crore. The project will have useful life of 5 years Current spot exchange rate is INR/USD is 83. The risk free rate in US is 4.186% and the same in India is 6.9768%. Cash inflows in USD from the project are as follows:

Year	1	2	3	4	5
Cash Inflow	30,00,000	40,00,000	50,00,000	60,00,000	70,00,000

PQR Ltd. is expecting net surplus of ₹ 1858.08 lakh to be received after closure of the project. There is no salvage value. PQR Ltd. want to take a forward cover to protect itself from exchange rate fluctuations.

N	1	2	3	4	5
PVIF (6.976%, n)	0.935	0.874	0.817	0.764	0.714
PVIF (4.186%, n)	0.959	0.921	0.884	0.849	0.815
PVIF (12%, n)	0.893	0.797	0.712	0.636	0.567
PVIF (15%, n)	0.870	0.756	0.658	0.572	0.497

You are required to recommend the INR/USD rate for the forward cover?

(Exam November – 2024)