

(b) Cash Flow on Cross Hedge [Share Price Decreases] [1½ Marks]

Particulars	Case A	Case B	Case C
Extent of Risk Coverage [A]	60%	100%	125%
No. of Contracts [B]	120	200	250
Loss on Settlement of BSE 500 Index Futures per unit of BSE 500 Future = 25 Points or Rs.25 [C]	Rs.25	Rs.25	Rs.25
Total Loss on Settlement of BSE 500 Index Futures = [No. of Contracts [B] × No. of Units per BSE Futures 100 × Gain in BSE 500 Index Points [C] [This is the Cash Outflow for Ashwin] [D]	Rs.3,00,000 [120 × 25 × 100]	Rs.5,00,000 [200 × 25 × 100]	Rs.6,25,000 [250 × 25 × 100]
Actual Sale Value [Sale at Spot] [T ₀]	Rs.25,00,000	Rs.25,00,000	Rs.25,00,000
Less: Sale Value if sold 6–Months later [T ₆] [25,000 Shares × Rs.80 per share]	Rs.20,00,000	Rs.20,00,000	Rs.20,00,000
Gain / (Loss) due to sale at T ₀	Rs.5,00,000	Rs.5,00,000	Rs.5,00,000
Less: Loss in settlement of settlement of BSE Futures' Buy Contract [Entered into to hedge price risk]	(Rs.3,00,000)	(Rs.5,00,000)	(Rs.6,25,000)
Net Gain to Ashwin	Rs.2,00,000	—	—
Net Loss to Ashwin	—	—	Rs.1,25,000

(Note: Net Gain / Loss represents savings from Fall in Net Wealth of Ashwin under hedging option, when compared with position without hedging)

(c) Cash Flow on Cross Hedge [Share Price Increases] [1½ Marks]

Particulars	Case A	Case B	Case C
Extent of Risk Coverage [A]	60%	100%	125%
No. of Contracts [B]	120	200	250
Gain on Settlement of BSE 500 Index Futures per Contract per Share of ETS = 25 Points or Rs.25 [C]	Rs.25	Rs.25	Rs.25
Total Gain on settlement of BSE 500 Index Futures = [No. of Contracts [B] × No. of Units per BSE 500 Index 100 × Gain in BSE 500 Index Points [C] [This is Cash Inflow for Ashwin] [D]	Rs.3,00,000 [120 × 25 × 100]	Rs.5,00,000 [200 × 25 × 100]	Rs.6,25,000 [250 × 25 × 100]
Actual Sale Value [Sale at Spot] [T ₀]	Rs.25,00,000	Rs.25,00,000	Rs.25,00,000
Less: Sale Value if sold 6–Months later [T ₆] [25,000 Shares × Rs.120 per share]	Rs.30,00,000	Rs.30,00,000	Rs.30,00,000
Gain / (Loss) due to sale at T ₀	(Rs.5,00,000)	(Rs.5,00,000)	(Rs.5,00,000)
Loss due to sale at T ₀	Rs.5,00,000	Rs.5,00,000	Rs.5,00,000
Less: Loss hedged due to Cross Hedge in 6–Months' BSE Futures [Gain in settlement of BSE Futures' Buy Contract]	(Rs.3,00,000)	(Rs.5,00,000)	(Rs.6,25,000)
Net Loss to Ashwin	Rs.2,00,000	—	—
Net Gain to Ashwin	—	—	Rs.1,25,000

(Note: Net Gain / Loss represents savings from Fall in Net Wealth of Ashwin under hedging option, when compared with position without hedging)

4. Price of ETC Falls by 30% — Protection for Ashwin [1 ½ Marks]

Particulars	Value
3–Months' Futures Index	12,500
Less: Actual Index as at T6	(12,000)
Depreciation / Fall in BSE 500 Index	500 Points
Effect: Since BSE 500 Index has depreciated, Ashwin should buy the BSE 500 at a higher price than the ruling price. Therefore, Ashwin would pay cash to settle the loss arising out of contract.	Loss
Total Loss on Settlement of BSE 500 Index Futures = [No. of Contracts [B] × No. of Units per BSE 500 Index Futures 100 × Fall in BSE 500 Index Points [C] [This is the Cash Outflow for Ashwin]	Rs.100 Lakhs [200 × Rs.500 × 100]
Cash Available on Sale of Shares	Rs.25 Lakhs
Net Outflow = Net Erosion in Net Wealth	Rs.75 Lakhs

Inference [1 Mark for a brief description]:

- Cross Hedge will not yield the desired result if the actual performance of the Index with reference to the price of the share does not match up to the past performance i.e. correlation value.
- A correlation of 0.90 means that only 90% to the total variance in ETC's stock price change is explained by BSE 500 Index and is equivalent to Market Risk. The balance of 10% is unique risk.
- Hedging can offset only the market risk and not the unique risk. Therefore, given a ETC's Beta of 1.1 with reference to BSE Index, the price of ETC will not always move 1.1 times the BSE Index change. There is a 10% possibility that there will be a more than or less than proportionate change (proportion is 1.1).
- Under such circumstances (wherein the change in Derivative Instrument i.e. BSE 500 Index and the Underlying Stock i.e. price of ETC, is not proportional), cross hedge can backfire and the investor may lose more than he had hedged for.

4(b) Valuation of Securities — Dividend Growth Model — Measurement of Growth 4 Marks

Dhanishta is contemplating investment in the shares of Praveena Motors Ltd. Praveena Motors had earned Rs.137.50 per share, and had paid out 20% of its earnings in the form of dividends. Industry standard for distribution and retention is 1 : 3. Company's return on net investment is expected to be 16% p.a. Ascertain the price to be paid for the share if the Company will follow industry norms for dividend distribution hereinafter and the required rate of return on investment for the Company is — (a) 15%; (b) 18%; (c) 20%; and (d) 24%.

Solution:**1. Market Price per Share — Formula [1 Mark]**

- $P_0 = D_1 \div (K_e - g)$
 P_0 = Price of the Share Now
 D_1 = Dividend at the end of Year 1
 K_e = Cost of Capital or Cost of Equity (i.e. investor's expected rate of return)
 g = Growth Rate in Dividends = Return on Investment × Retention Ratio
 = Rate at which earnings and dividends of Year 1 will grow

2. Computation of Factors

- Rate of growth for Year 1 = $br = 80\% \times 16\% = 12.8\%$ **1 Mark**
 Rate of growth for Year 2 onwards = $75\% \times 16\% = 12\%$ **1 Mark**
 Earnings for Year 1 = $E_0 \times (1+g) = Rs.137.50 \times (1 + 12.8\%) = Rs. 155.10$ **1½ Marks**
 Dividend for Year 1 = $E_1 \times \text{Standard Payout Ratio} = Rs.155.10 \times 25\% = Rs.38.78$ **1½ Marks**

3. Market Price per Share [$\frac{1}{2}$ Mark Per Case = $4 \times \frac{1}{2}$ Marks = 2 Marks]

Particulars	Case A	Case B	Case C	Case D
Investors' Expected Rate of Return [K_e]	15%	18%	20%	24%
Market Price per Share [$DPS \div (K_e - g)$]	Rs.1,292.67 $\left[\frac{Rs.38.78}{15\% - 12\%} \right]$	Rs.646.33 $\left[\frac{Rs.38.78}{18\% - 12\%} \right]$	Rs.484.75 $\left[\frac{Rs.38.78}{20\% - 12\%} \right]$	Rs.323.17 $\left[\frac{Rs.38.78}{24\% - 12\%} \right]$

4(c) What are the differences between Issue of shares through Book Building Process and Offer of Shares through Normal Public Issue? 4 Marks

Features	Fixed Price	Book Building
Pricing [2 Marks]	Prices at which the securities are offered / allotted are known in advance to the Investor.	Price at which securities will be offered / allotted is not known in advance to the investor. Only a price range is known to the Investor, and he has to bid for shares within that price range.
Demand [1 Mark]	Demand for the securities offered is known only after the closure of the issue.	Demand for the securities offered can be known everyday as the book is built.
Payment [1 Mark]	Payment is made at the time of subscription and refund is given after allocation.	Payment is made only after allocation.

5(a) Beta of Levered Firm — Determination of Discount Rate**12 Marks**

India Clothing Mills (ICM) is planning to foray into the business of establishing and running malls all around India, as it sees tremendous opportunity in that area. Presently, only one Company (OSS Bazaar Ltd) is in that line, establishing malls of size comparable to ICMs proposed malls.

The cost of establishing a single mall, on an average, works out to Rs.125 Crores. It has ascertained the estimated operating cash inflows from each of those malls.

ICM's share is quoted at Rs.540, its equilibrium price, for a return of Rs.81 (for both Dividends and Capital Appreciation). ICM's share has a Beta of 1.50. Its Capital Structure is 40% Equity: 60% Debt, and applies this measure to each of its projects / business. Average Tax rate as applicable to ICM is 35%.

Particulars relating to OSS Bazaar Ltd are — (a) Equity Beta of 1.85; (b) Capital for its projects financed 40% by Debt; (c) Effective Tax Rate – 20% [Government has provided tax sops to companies engaged in establishing malls]

The Company's management is at a loss as to what discount rate should be applied for undertaking a financial feasibility study. Recommend the appropriate discount rate if the Risk Free Rate of Return is 6%, Cost of Debt is 9% (not carrying any risk factor).

Solution:

1. Calculation of Project Beta (Beta of Mall Business)

Note: For Computing Project Beta, beta of a comparable project only should be considered. Therefore, Beta of Mall Business of ICM should be ascertained from the figures of OSS Bazaar Ltd and not the particulars of ICM's Clothing Mill Business.

(a) Beta of OSS Ltd [2 Marks]

Beta of Mall Business $\beta_{MALL} = \text{Beta of OSS Bazaar Ltd } (\beta_{OSS})$

$\beta_{OSS} = \text{Weighted Average Beta of Equity and Debt}$

$\Rightarrow \beta_{OSS} = \beta_{OSS-EQUITY} \times \text{Equity} \div [\text{Equity} + \text{Debt} \times (1 - \text{Tax Rate})]$

$$\beta_{\text{OSS-EQUITY}} = 1.85$$

$$\text{Debt} = 40\% \text{ of Value} = 0.40$$

$$\text{Equity} = 1 - \text{Debt} = 1 - 0.40 = 0.60$$

Beta of Debt $\beta_D = 0$ (Debt does not carry any Risk)

$$\text{Tax Rate} = 20\% = 0.20$$

$$1 - \text{Tax} = 1 - 0.20 = 0.80$$

$$\beta_A = \frac{\beta_{EA} \times \text{Equity}}{\text{Equity} + \text{Debt}(1 - \text{Tax})} + \frac{\beta_{\text{Debt}} \times \text{Debt} \times (1 - \text{Tax})}{\text{Equity} + \text{Debt}(1 - \text{Tax})}$$

$$\begin{aligned} \text{Therefore, } \beta_{\text{OSS}} &= \beta_{\text{OSS-EQUITY}} \times \text{Equity} \div [\text{Equity} + \text{Debt} \times (1 - \text{Tax Rate})] + 0 \\ &= 1.85 \times 0.60 \div [0.60 + (0.40 \times 0.80)] \\ &= 1.11 \div [0.60 + 0.32] \\ &= 1.11 \div 0.92 = \mathbf{1.207} \end{aligned}$$

(b) Beta of Mall Business [1 Mark]

$$\beta_{\text{MALL}} = \beta_{\text{OSS}}$$

$$\text{Therefore, Beta of Mall Business } (\beta_{\text{MALL}}) = \mathbf{1.207}$$

2. Calculation of Equity Beta of ICM's Mall Business [2 Marks]

$$\beta_A = \frac{\beta_{EA} \times \text{Equity}}{\text{Equity} + \text{Debt}(1 - \text{Tax})} + \frac{\beta_{\text{Debt}} \times \text{Debt} \times (1 - \text{Tax})}{\text{Equity} + \text{Debt}(1 - \text{Tax})}$$

$$\beta_{\text{MALL}} = \beta_{\text{ICM-EQUITY}} \times \text{Equity} \div [\text{Equity} + \text{Debt} \times (1 - \text{Tax Rate})] + 0$$

$$\beta_{\text{MALL}} = 1.207$$

$$\text{Debt} = 60\% \text{ of Value} = 0.60$$

$$\text{Equity} = 40\% \text{ of Value} = 0.40$$

$$\text{Tax Rate} = 20\% = 0.20$$

$$1 - \text{Tax} = 1 - 0.20 = 0.80$$

$$\begin{aligned} \Rightarrow 1.207 &= \beta_{\text{ICM-EQUITY}} \times 0.40 \div [0.40 + (0.60 \times 0.80)] \\ &= \beta_{\text{ICM-EQUITY}} \times 0.40 \div [0.40 + 0.48] \\ &= \beta_{\text{ICM-EQUITY}} \times 0.40 \div 0.88 \\ &= \beta_{\text{ICM-EQUITY}} \times 0.455 \end{aligned}$$

$$\Rightarrow \beta_{\text{ICM-EQUITY}} = 1.207 \div 0.455 = \mathbf{2.65}$$

3. Calculation of Equity Expected Return [$R_{E-ICM-MALL}$] on ICM's Mall Business

(Under CAPM)

(a) Calculation of Equity Return of ICM's Cloth Business under CAPM [$E(R_{E-ICM-CLOTH})$] [1 Mark]

Particulars	Value
Return on Equity of ICM's Cloth Business	Rs.81
Market Price of Equity Share of ICM	Rs.540
Return on Equity Share of ICM [$\text{Rs.81} \div \text{Rs.540}$]	15%
Since Market Price is in Equilibrium, Expected Return under CAPM = Actual Return	15%

(b) Calculation of Market Return [R_M] [1½ Marks]

$$\text{Expected Return under CAPM } [E(R_{E-ICM-CLOTH})] = R_F + [\beta_{E-ICM-CLOTH} \times (R_M - R_F)]$$

$$\Rightarrow 15\% = 6\% + 1.50 \times (R_M - 6\%)$$

$$15\% - 6\% = 1.50 \times (R_M - 6\%)$$

$$\Rightarrow R_M - 6\% = 9\% \div 1.50$$

$$\Rightarrow R_M = 6\% + 6\% = \mathbf{12\%}$$

(c) Calculation of Equity Expected Return on ICM's Mall Business [$R_{E-ICM-MALL}$] [1½ Marks]

$$\text{Expected Return under CAPM } [E(R_{E-ICM-MALL})] = R_F + [\beta_{E-ICM-MALL} \times (R_M - R_F)]$$

$$\begin{aligned} \Rightarrow E(R_{E-ICM-MALL}) &= 6\% + 2.65 \times (12\% - 6\%) \\ &= 6\% + 2.65 \times 6\% \\ &= 21.90\% \end{aligned}$$

4. Calculation of Weighted Average Cost of Capital of ICM's Mall Business [3 Marks]

Source of Fund	Weight	Cost [Net of Tax]	Weighted Cost
(1)	(2)	(3)	(4) = (2) × (3)
Debt	0.60	7.20% [9% × (1 – Tax 20%) = 9% × 0.80]	4.32%
Equity	0.40	21.90%	8.76%
	1.00	Weighted Average Cost of Capital	13.08%

Conclusion: Appropriate Discount Rate for evaluating the financial feasibility of the project is the Weighted Average Cost of Capital of **13.08%**.

5(b) Write short notes on Certificate of Deposit (CD).**4 Marks**

(Any 8 Points with brief explanations = 8 × ½ Mark = 4 Marks)

CD is a negotiable money market instrument and issued in dematerialised form or as a Usance Promissory Note, for funds deposited at a Bank or other eligible Financial Institution for a specified time period.

- Eligible issuers of CD:** CDs can be issued by – (a) Scheduled Commercial Banks excluding Regional Rural Banks (RRBs) and Local Area Banks (LABs), and (b) select All-India Financial Institutions that have been permitted by RBI to raise short-term resources within the umbrella limit fixed by RBI.
- Investors in CD:** CDs can be issued to Individuals, Corporations, Companies, Trusts, Funds, Associations,, etc. Non-Resident Indians (NRIs) may subscribe to CDs, but only on non-repatriable basis which should be clearly stated on the Certificate. Such CDs cannot be endorsed to another NRI in the secondary market.
- Maturity Period:** The maturity period shall be as under –
(a) CD's issued by **Banks:** Not less than **15 days** and not more than **one year** from the date of issue.
(b) CD's issued by **FI's:** Not less than **1 year** and not exceeding **3 years** from the date of issue.
- Repayment:** There will be no grace period for repayment of CDs. If the maturity date happens to be holiday, the issuing bank should make payment on the immediate preceding working day. Banks/FIs may, therefore, so fix the period of deposit that the maturity date does not coincide with a holiday to avoid loss of discount / interest rate.
- Minimum Size of Issue and Denominations:** Minimum amount of a CD should be Rs.1 lakh i.e, the minimum deposit that could be accepted from a single subscriber should not be less than Rs.1 lakh and in the multiples of Rs.1 lakh thereafter.
- Aggregate Amount of CD:** Banks have the freedom to issue CDs depending on their requirements. An FI may issue CDs within the overall umbrella limit fixed by RBI, i.e, issue of CD together with Term Money Borrowings (TMB), Term Deposits (TD), Commercial Papers (CP) and Inter-Corporate Deposits should not exceed 100% of its Net Owned Funds, as per the latest audited Balance Sheet.
- Format of CDs:** Issuance of CD will attract stamp duty. Banks / FIs should issue CDs only in the dematerialised form. However, under the Depositories Act, 1996, investors have the option to seek certificate in physical form. Such requests should be reported to RBI separately.

8. **Transferability:** Physical CDs are freely transferable by endorsement and delivery. Dematted CDs can be transferred as per the procedure applicable to other demat securities. There is no lock-in period for CDs.
9. **Security Aspect:** Physical CDs are freely transferable by endorsement and delivery. So, the CD certificates should be printed on good quality security paper and necessary precautions are taken to guard against tampering with the document. The CD should be signed by two or more authorized signatories.
10. **Duplicate Certificates:** In case of the loss of physical CD certificates, duplicate certificates can be issued after compliance of the following: (a) Public Notice in at least one local newspaper, (b) Lapse of a reasonable period (say 15 days) from the date of the notice in newspaper, and (c) Execution of an indemnity bond by the investor to the satisfaction of the issuer of CD. Duplicate Certificate should state so and should only be issued in physical form. No fresh stamping is required.
11. **Discount/ Coupon Rate:** CDs may be issued at a discount on face value. Banks/FIs are also allowed to issue CDs on floating rate basis provided the methodology of compiling the floating rate is objective, transparent and market based. The issuing bank/FI is free to determine the discount/coupon rate. The interest rate on floating rate CDs would have to be reset periodically in accordance with a pre-determined formula that indicates the spread over a transparent benchmark.
12. **Reserve Requirements:** Banks have to maintain the appropriate reserve requirements, i.e, Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR), on the issue price of the CDs.
13. **Loans/Buy-backs:** Banks / FIs cannot grant loans against CDs. They cannot buy-back their own CDs before maturity.
14. **Payment of Certificate:** Since CDs are transferable, the physical certificate may be presented for payment by the last holder and payment shall be made only by a crossed cheque. The holders of dematted CDs will claim the payment through their respective depository participants (DPs) and give transfer/delivery instructions to transfer the demat security. The holder should also communicate to the issuer by a letter/fax enclosing the copy of the delivery instruction it had given to its DP and intimate the place at which the payment is requested to facilitate prompt payment.
15. **Accounting:** Banks/FIs may account the issue price under the Head "CDs issued" and show it under Deposits. Accounting entries towards discount will be made as in the case of "Cash Certificates". Banks/FIs should maintain a register of CDs issued with complete particulars.
16. **Standardised Market Practices and Documentation:** Fixed Income Money Market and Derivatives Association of India (FIMMDA) may prescribe, in consultation with the RBI, for operational flexibility and smooth functioning of CD market, any standardised procedure and documentation that are to be followed by the participants, in consonance with the international best practices.
17. **Reporting:** Banks should include the amount of CDs in the fortnightly return u/s 42 of RBI Act and also separately indicate the amount so included by way of a footnote in the return. A further fortnightly return is required to be submitted to the RBI within 10 days from the end of the fortnight date.

5(c) Explain the terms "Intrinsic value of an option" and "Time value of an option". 4 Marks

[Examples are optional. They do not fetch any extra marks]

1. Intrinsic Value: [2 Marks]

- (a) Intrinsic Value is the value that an option would fetch if it is exercised today (i.e. before the expiry date). This is more relevant for American Option, which can be exercised any time before the expiry date.
- (b) Intrinsic Value = Difference between the Option's Exercise Price and the underlying asset's Current Market Price.

Options	Intrinsic Value
Call Option	[Maximum of (CMP – EP), 0]
Put Option	[Maximum of (EP – CMP), 0]

Note: The Minimum Intrinsic Value of any option will be Zero and not loss, since an option would not be exercised, if it were not advantageous.

- (c) **Example:** If an option on shares of A Ltd with an exercise price of Rs.500, and period to expiry of 50 days, is quoted at Rs.475 on 07.07.2007, the intrinsic value for Put Option and Call Option would be as follows —

Options	Computation	Intrinsic Value
Call Option	[Maximum of (Rs.500 – Rs.475), 0]	Rs.25
Put Option	[Maximum of (Rs.475 – Rs.500), 0]	0

2. Time Value: [2 Marks]

- (a) It is the Risk Premium that the writer of an option requires to sell the right to the holder. It is also known as “Extrinsic Value”. It is the value of premium over and above the Intrinsic Value.
- (b) Mathematically it is maximum of [(Premium **Less** Intrinsic Value), 0]
- (c) **Example:** Option (both Call and Put) on shares of A Ltd with an exercise price of Rs.500, and period to expiry of 50 days, is priced at Rs.40. The ruling Market Price as on 07.07.2007 is Rs.470.

- **For Call Option:**

$$\begin{aligned}\text{Intrinsic Value} &= \text{Maximum of } [(CMP - EP), 0] \\ &= \text{Maximum of } [(Rs.500 - Rs.470), 0] = Rs.30 \\ \text{Time Value} &= \text{Maximum of } [(Premium - \text{Intrinsic Value}), 0] \\ &= \text{Maximum of } [(Rs.40 - 30), 0] = Rs.10\end{aligned}$$

- **For Put Option:**

$$\begin{aligned}\text{Intrinsic Value} &= \text{Maximum of } [(EP - CMP), 0] \\ &= \text{Maximum of } [(Rs.470 - Rs.500), 0] = Rs.0 \\ \text{Time Value} &= \text{Maximum of } [(Premium - \text{Intrinsic Value}), 0] \\ &= \text{Maximum of } [(Rs.40 - Rs.0), 0] = Rs.40\end{aligned}$$

3. **Significance:** Intrinsic Value and Time Value of an option are primary determinants of the Option's Price.

6(a) Equated Annual Costs

12 Marks

Your client whose pre-tax opportunity cost of capital is 20% (when tax rate was 40%), is considering a laser technology cutting machine, which at the end of its economic life is expected to be replaced by an identical machine, and so on, continuously for an infinite period.

The machine has a maximum life of four years. But its productivity starts decreasing in the third year and the fourth year, and therefore, can be replaced after two years or three years or four years. While replacing the original supplier will take it back. The cost of the machinery is Rs.3.60 Crores, including cenvatable duties of Rs.80 Lakhs, which can be availed as a benefit at the end of Year 1.

Following are the information relating to the machine — (Rs.Lakhs) (net of duties)

Years	1	2	3	4
Revenue	400	550	440	350
Cost	280	350	320	280
Salvage Value	220	170	120	30

Depreciation for Income Tax Purposes is WDV at 15% per annum normally Plus an additional depreciation of 20% for the first year alone.

If expected future tax rate is 30%, identify the appropriate replacement cycle. Assume that tax rate is 20% for Capital Gains (no tax benefits for capital loss), and that post tax returns expectation are based on future tax rates.

12 Marks

Answer –**1. Computation of Depreciation, Tax Savings and Net Salvage Proceeds [4 Marks]**

Particulars	Year 1	Year 2	Year 3	Year 4
Opening WDV	280.00	182.00	154.70	131.49
Less: Depreciation @ 35% for Year 1 / 15% thereafter	98.00	27.30	23.21	19.72
A. Closing WDV	182.00	154.70	131.49	111.77
B. Salvage Value (Given)	220.00	170.00	120.00	30.00
C. Gain / (Loss) [Salvage Value (B) Less Closing WDV (A)]	38.00	15.30	(11.49)	(81.77)
D. Capital Tax on Gain @ 20%	(7.60)	3.06	—	—
E. Net Salvage Inflow [Salvage Value (B) Less Tax (D)]	212.40	166.94	120.00	30.00
F. Tax Savings on Depreciation (Depn. × 30%)	29.40	8.19	6.96	5.92

[1 Mark Each for computing values for each year = 4 × 1 Mark = 4 Marks]

2. Computation of Cash Flows [3 Marks]

Particulars	Year 1	Year 2	Year 3	Year 4
Revenue	400.00	550.00	440.00	350.00
Less: Cost	(280.00)	(350.00)	(320.00)	(280.00)
Net Profit (before Depreciation)	120.00	200.00	120.00	70.00
Less: Tax at 30%	(36.00)	(60.00)	(36.00)	(21.00)
Profit After Tax	84.00	140.00	84.00	49.00
Add: CENVAT Credit on Machinery Utilized	80.00	—	—	—
Add: Tax Savings on Depreciation	29.40	8.19	6.96	5.92
Total Cash Flows	193.40	148.19	90.96	54.92

[For Correct Treatment of CENVAT Credit 1 Mark + ½ Mark for Each Year]

3. Computation of Equivalent Annual Cost [4 Marks]

Replace at the end of —	Cash Flow	DF @ 14%	DCF	Year 2	Year 3	Year 4
Inflows: Year 1	193.40	0.877	169.61	169.61	169.61	169.61
Year 2	148.19	0.769	113.96	113.96	113.96	113.96
Year 3	90.96	0.675	61.40	—	61.40	61.40
Year 4	54.92	0.592	32.51	—	—	32.51
Inflow on account of Salvage Proceeds						
Year 2	166.94	0.769	128.38	128.38	—	—
Year 3	120.00	0.675	81.00	—	81.00	—
Year 4	30.00	0.592	17.76	—	—	17.76
Total Cash Inflows				411.95	425.97	395.24
Less: Initial Investment				(360.00)	(360.00)	(360.00)
Net Present Value				51.95	65.97	35.24
Annuity Factor				1.646	2.321	2.913
Equivalent Annual Benefit				31.56	28.42	12.10

Note: Discount rate to be used is only post tax discount rate. In the instant case, Pre Tax Rate is 20%, and in future tax rate is 30%. Therefore, the future applicable discount rate i.e. 14% should be used, and not past rate of 12%. **[Choice of Discount Rate at 14% (along with explanation) = 1 Mark, Computation of Equivalent Annual Cost = 1 Mark for Every Year = Total 4 Marks]**

4. Conclusion: The optimal replacement time is 2 Years, as the Equivalent Annual Benefit is maximum for that replacement cycle. **[1 Mark]**

6(b) Explain the Participating Notes. What are the risk involved in its issues?

- Meaning:** Participatory Notes (PNs) are offshore derivative instruments in the form of contract notes issued by registered Foreign Institutional Investors (FIIs) against underlying securities to Overseas Investors who wish to stay away for the registration hassles.
- Benefit:** These are not regulated by stringent Government regulations, and therefore act as a simple and easy way for investment and raise finance.
- Risk:**
 - Investor's Identity Not Known:** Since these investment in these funds does not require any stringent requirements, identity of the investor is generally not known.
 - Investment Alternative for Illegal Persons / Money:** It services as an attractive investment route for money siphoned off or money belonging to terror groups. It serves as an investment alternative for black-money, whereby such money will yield returns, and will not be idle at all.
- Measures taken by the Government:** Government has issued restrictions on the persons who can issue participatory notes, thereby curtailing to a great extent on investment by illegal entities and sources.

[4 Points × 1 Mark Each = 4 Marks]

6(c) Options — Basics — Exercise vs. Lapse

Sundar Ramanujam had entered into 2 Put Options and 2 Call Options in different securities, the particulars of which are given below, along with their exercise price and actual market price on the date of exercise —

Security	Exercise Price	Actual Market Price	Nature of Option
A	Rs.120	Rs.122	Put Option
B	Rs.758	Rs.758	Put Option
P	Rs.369	Rs.376	Call Option
Q	Rs.450	Rs.444	Call Option

What is his position on the date of exercise and what would he do?

Solution:

1. Put Options [Right to Sell] [2 Marks]

Security	Exercise Price (EP)	Actual Market Price (AMP)	AMP vs. EP [Higher]	Position	Action
A	Rs.120	Rs.122	AMP	Out of Money	Lapse
B	Rs.758	Rs.758	Equal	At the Money	No Action

2. Call Option [Right to Buy] [2 Marks]

Security	Exercise Price (EP)	Actual Market Price (AMP)	AMP vs. EP [Higher]	Position	Action
P	Rs.369	Rs.376	AMP	In the Money	Exercise
Q	Rs.450	Rs.444	EP	Out of Money	Lapse

[1 Mark for Every Security × 4 Securities = 4 Marks]