

**CA FINAL
SFM
H L GUPTA
SOLUTION OF
NOV 2019**



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TO BUY PEN/G DRIVE
OF CA/CMA CALL US
8920730907**

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ASK YOURSELF  
IF WHAT YOU  
ARE DOING TODAY  
IS GETTING  
YOU CLOSER  
TO WHERE YOU  
WANT TO BE TOMORROW.  
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Roll No. Final New Syllabus

Paper - 2

Total No. of Questions – 6 Strategic Financial Management Total No. of Printed Pages – 12

Time Allowed – 3 Hours

Maximum Marks – 100

JLC

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate has not opted for Hindi Medium, his / her answers in Hindi will not be valued.

Question No. 1 is compulsory.

Candidates are also required to answer any **four** questions from the remaining **five** questions.

Working notes should form part of the respective answers.

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Marks

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1. (a) A Ltd., a listed company, is considering merger of B Ltd. which is also a listed company, with itself by means of a stock swap (exchange). B Ltd. has agreed to a plan under which A Ltd. will offer the current market value of B Ltd.'s shares.

Additional Information :

Particulars	A Ltd.	B Ltd.
Earnings after tax (₹)	10,00,000	2,50,000
Number of shares outstanding	4,00,000	2,00,000
Current market price (₹) per share	50	20

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On the basis of above information, you are required to calculate the following :

- (i) What is the pre-merger Earnings Per Share (EPS) and P/E ratios of both the companies ?
- (ii) If B Ltd.'s P/E is 10, what is its current market price per share ?
What is the exchange ratio ? What will A Ltd.'s post-merger EPS be ?
- (iii) What must the exchange ratio be for A Ltd.'s Pre-merger and Post-merger EPS to be the same ?



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- (b) P Ltd. is contemplating to borrow an amount of ₹ 50 crores for a period of 3 months in the coming 6 months time from now. The current rate of interest is 8% per annum but it may go up in 6 months time. The company wants to hedge itself against the likely increase in interest rate.

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The Company's Bankers quoted an FRA (Forward Rate Agreement) at 8.30% per annum.

Compute the effect of FRA and actual rate of interest cost to the company, if the actual rate of interest during consideration period happens to be (i) 8.60% p.a., or (ii) 7.80% p.a.

(Show your workings on the basis of months)

- (c) State briefly the basic characteristics of venture capital financing ?

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2. (a) Cinderella Mutual Fund, an approved mutual fund, sponsored open-ended equity oriented scheme "Rudolf Opportunity Fund". There are three plans under the scheme viz. 'A' – Dividend Re-investment plan, 'B' – Bonus plan and 'C' – Growth plan.

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At the time of initial public offer on 1-4-2009, Mr. Amit, Mr. Ashish and Mr. Arun, three investors invested ₹ 2,00,000 each at face value of ₹ 10 per unit and chosen plan 'B', 'C' and 'A' respectively.

The particulars of the fund over the period are as follows :

Date	Dividend %	Bonus Ratio	Net Asset value per unit (₹)		
			Plan A	Plan B	Plan C
31.07.2013	10	—	30.70	31.20	35.40
31.03.2014	35	5:4	58.42	31.05	58.25
30.10.2017	20	—	42.18	26.45	56.45
15.03.2018	12.50	—	46.45	27.72	62.78
31.03.2018	—	1:3	45.20	20.05	67.12
25.03.2019	20	1:4	48.10	19.95	71.42
31.07.2019	—	—	53.75	22.98	82.07

On 31st July, 2019 all the three investors redeemed all the balance units.

Consider the following :

- (a) Long-term capital gain is exempt from Income-tax.
- (b) Short-term capital gain is subject to 10% Income-tax.
- (c) Security Transaction Tax is 0.2% only on sale / redemption of units.
- (d) Ignore Education Cess.

You are required :

- (i) To calculate the Effective Yield per annum (annual rate of return) of each of the investors.
- (ii) To suggest the name of investor with the highest Effective Yield per annum with the difference to his nearest investor.
(Show your calculations up to two decimal points)

Q.26. (CA Final Nov. 2005) Sun Mutual Fund (Approved Mutual Fund) Sponsored open-ended equity oriented scheme “ Chanakya Opportunity Fund” .There were three plans Viz ‘A ‘ – Dividend Reinvestment Plan , ‘B ‘ Bonus Plan & ‘ C’ Growth Plan .

At the time of initial Public Offer on 01.04-1995 , Mr. Anand , Mr. Bacchan & Mrs. Charu , three investor invested `1,00,000 each & chosen ‘ B’ , ‘C’ & ‘ A ‘ Plan respectively . The History of the fund is as follows :

Date	Dividend (%)	Bonus Ratio	Net Asset Value per Unit (F.V `10)		
			Plan A	Plan B	Plan C
28-07-1999	20		30.70	31.40	33.42
31.03.2000	70	5:4	58.42	31.05	70.05
31.10.2003	40		42.18	25.02	56.15
15-03-2004	25		46.45	29.10	64.28
31-03-2004		1:3	42.18	20.05	60.12
24-03-2005	40	1:4	48.10	19.95	72.40
31-07-2005			53.75	22.98	82.07

On 31st July all three investors redeemed all the balance units

Calculate annual rate of return to each of the investors.

Consider :

- Long Term Capital Gain is exempt from Income tax.
- Short Term Capital Gain is subject to 10% Income tax.
- Security Transaction Tax 0.2 percent only on sale/redemption of units .
- Ignore Education Cess.

Ans Annual return of : Mrs. Charu = 67.64%, Mr. Anand = 73.33%, Mr. Bacchan = 69.59%.

26 Cal of Annualised return on dividend reinvestment Plan

Mrs Choru

Date	dividend	NAV	No. of units Purch	Total no. of units
01-04-1995	—	10	10,000	$\approx 10,000$
28-07-99	$\frac{20}{100} \times 10000 = 20000$	30.70	$\frac{20000}{30.70} = 651.47$	$10000 + 651.47 = 10,651.47$
31-03-2000	$\frac{70}{100} \times 10,651.47 = 74560.29$	58.42	$\frac{74560.29}{58.42} = 1276.28$	$10651.47 + 1267.28 = 11,927.75$
30-10-03	$\frac{40}{100} \times 11297.75 = 4771.00$	42.18	$\frac{4771}{42.18} = 1131.13$	$11927.75 + 1131.13 = 13058.88$
15-03-04	$\frac{25}{100} \times 13058.88 = 32647.20$	46.65	$\frac{32647.20}{46.65} = 702.85$	$13058.88 + 702.85 = 13761.73$
24-03-05	$\frac{40}{100} \times 13761.73 = 55046.92$	48.10	$\frac{55046.92}{48.10} = 1144.43$	$13761.73 + 1144.43 = 14,906.16$

Sale 31-07-2005

— Activate Windows

Cal of net amount received by Mrs Chary due to redemption

$$\begin{aligned} \text{Redemption Value} &= 14906.16 \times ₹ 53.75 = ₹ 8,01,206.10 \\ &= 1602.41 \\ &\hline &₹ 7,99,603.69 \end{aligned}$$

less short term Capital gain

$$1144.43 \left[53.75 (1 - 0.002) - 48.10 \right] \times \frac{10}{100}$$

Net Received

$$= 634$$

$$\begin{aligned} &\hline ₹ 7,98,969.69 \\ &1,00,000 \end{aligned}$$

Initial investment 10,00,000

Net Return

$$\begin{aligned} &\hline ₹ 6,98,969.69 \end{aligned}$$

WN11 C₁ of total Period, in Months

01-04-1995 ————— 01-04-2005 ————— 31-07-2005
10 yrs x 12 4m
120 Mon

Total periods in Months = $120 + 4 = 124$ Months

$$\text{Return \% P.A} = \frac{6.98,969}{10000} \times 100 \times \frac{12}{124} = \underline{\underline{67.64\%}}$$

Cal of Return % of MY Annuend (Bonus Plan)

Date	Unit	NAV	Bonus	No. of Unit	
01-04-1995	10,000	10	-		= 10,000
31-03-2000	10,000	31.05	$\frac{5}{4} \times 10000 = 12500$	10000 + 12500	= 22500
31-03-2004	22500	20.05	$\frac{1}{3} \times 22500 = 7500$	22500 + 7500	= 30,000
24-03-2005	30,000	19.95	$\frac{1}{4} \times 30000 = 7500$	30000 + 7500	= <u>37500</u>

Cal of Return %.

$$\text{Redemption Value} = 37500 \times ₹ 22.98 = ₹ 8,61,750$$

less Security Transaction Tax @ 0.2%.

$$= 1723.50$$

$$₹ 8,60,026.50$$
$$2235$$

$$\text{less STCG } [22.98(1-0.002) - 19.95] 7500 \times \frac{10}{100}$$

Net Amount received

$$₹ 8,57,791.50$$
$$100000$$

Investment Amount

Net Return

$$₹ 7,57,791.50$$

$$\text{Return \% P.A.} = \frac{7,57,791}{100000} \times 100 \times \frac{12}{124} = 73.33\%$$



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Evaluation of return % using growth plane.

$$\begin{array}{r}
 \text{Redemption value } 10,000 \times ₹ 82.07 = ₹ 8,20,700 \\
 \text{less security transaction Tax @ 0.2\%} \quad \quad \quad = 1641.40 \\
 \hline
 ₹ 8,19,058.60 \\
 100000 \\
 \hline
 ₹ 7,19,058
 \end{array}$$

Investment

Return

$$\begin{aligned}
 \text{Return \%} &= \frac{7,19,058}{100000} \times 100 \times \frac{12}{124} \\
 &= \underline{\underline{69.59\%}}
 \end{aligned}$$



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- (b) A future contract is available on R Ltd. that pays an annual dividend of ₹ 4 and whose stock is currently priced at ₹ 125. Each future contract calls for delivery of 1,000 shares to stock in one year, daily marking to market. The corporate treasury bill rate is 8%.

Required :

- Given the above information, what should the price of one future contract be ?
- If the company stock price decreases by 6%, what will be the price of one futures contract ?
- As a result of the company stock price decrease, will an investor that has a long position in one futures contract of R Ltd. realizes a gain or loss ? What will be the amount of his gain or loss ?
(Ignore margin and taxation, if any)

- (c) Identify the benefits of Securitization from the angle of Originator.



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3. (a) AB Ltd.'s equity shares are presently selling at a price of ₹ 500 each. 8
- An investor is interested in purchasing AB Ltd.'s shares. The investor expects that there is a 70% chance that the price will go up to ₹ 650 or a 30% chance that it will go down to ₹ 450, three months from now. There is a call option on the shares of the firm that can be exercised only at the end of three months at an exercise price of ₹ 550.
- Calculate the following :
- (i) If the investor wants a perfect hedge, what combination of the share and option should he select ?
 - (ii) Explain how the investor will be able to maintain identical position regardless of the share price.
 - (iii) If the risk-free rate of return is 5% for the three months period, what is the value of the option at the beginning of the period ?
 - (iv) What is the expected return on the option ?



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(b) Closing values of BSE Sensex from 6th to 17th day of the month of January of the year 20xx were as follows :

8

Days	Date	Day	Sensex
1	6	THU	34522
2	7	FRI	34925
3	8	SAT	No Trading
4	9	SUN	No Trading
5	10	MON	35222
6	11	TUE	36000
7	12	WED	36400
8	13	THU	37000
9	14	FRI	No Trading
10	15	SAT	No Trading
11	16	SUN	No Trading
12	17	MON	38,000

Calculate Exponential Moving Average (EMA) of Sensex during the above period. The 30 days simple moving average of Sensex can be assumed as 35,000. The value of exponent for 30 days EMA is 0.064.

Provide analyzed conclusion on the basis of your calculations.

(Calculations should be up to three decimal points.)



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1. Closing values of BSE Sensex from 6th to 17th day of the month of January of the year 200X were as follows:

Days	Date	Day	Sensex
1	6	THU	14522
2	7	FRI	14925
3	8	SAT	No Trading
4	9	SUN	No Trading
5	10	MON	15222
6	11	TUE	16000
7	12	WED	16400
8	13	THU	17000
9	14	FRI	No Trading
10	15	SAT	No Trading
11	16	SUN	No Trading
12	17	MON	18000

Calculate Exponential Moving Average (EMA) of Sensex during the above period. The 30 days simple moving average of Sensex can be assumed as 15,000. The value of exponent for 30 days EMA is 0.062.

Give detailed analysis on the basis of your calculations.



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Procedure for Computing Exponential Moving Average.

- ① Consider the index value of current day
- ② Subtract EMA of previous day from current index value
- ③ Multiply the exponential value to the difference computed above (Exponential value will be given the questions)
- ④ Add or less the product obtained above to EMA of previous day for obtaining EMA for current day.



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Answers to the Practical Questions

1.

Date	1 Sensex	2 EMA for Previous day	3 1-2	4 3×0.062	5 EMA $2 + 4$
6	14522	15000	(478)	(29.636)	14970.364
7	14925	14970.364	(45.364)	(2.812)	14967.55
10	15222	14967.55	254.45	15.776	14983.32
11	16000	14983.32	1016.68	63.034	15046.354
12	16400	15046.354	1353.646	83.926	15130.28
13	17000	15130.28	1869.72	115.922	15246.202
17	18000	15246.202	2753.798	170.735	15416.937

Conclusion – The market is bullish. The market is likely to remain bullish for short term to medium term if other factors remain the same. On the basis of this indicator (EMA) the investors/brokers can take long position.



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Marks

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4. (a) Following information is available of M/s. TS Ltd.

(₹ in crores)

PBIT	5.00
Less : Interest on Debt (10%)	1.00
PBT	4.00
Less : Tax @ 25%	1.00
PAT	3.00
No. of outstanding shares of ₹ 10 each	40 lakh
EPS (₹)	7.5
Market price of share (₹)	75
P/E ratio	10 Times

TS Ltd. has an undistributed reserves of ₹ 8 crores. The company requires ₹ 3 crores for the purpose of expansion which is expected to earn the same rate of return on capital employed as present. However, if the debt to capital employed ratio is higher than 35%, then P/E ratio is expected to decline to 8 Times and rise in the cost of additional debt to 14%. Given this data which of the following options the company would prefer, and why ?

Option (i) : If the required amount is raised through debt, and

Option (ii) : If the required amount is raised through equity and the new shares will be issued at a price of ₹ 25 each.



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- (b) Following information relates to M/s A Ltd. which is a manufacturing-cum-exporting unit. It is exporting some electronic components to Japan, USA and Europe on 90 days credit terms :

Cost and Sales Information :

	Japan	USA	Europe
Variable cost per unit	₹ 225	₹ 395	₹ 510
Export sale price per unit	Yen 650	\$ 10.23	Euro 11.99
Receipts from sale due in 90 days	Yen 78,00,000	\$ 1,02,300	Euro 95920
Foreign exchange rate information			
	Japan Yen/Re	USA \$/Re	Europe Euro/Re
Spot market	2.417-2.437	0.0214-0.0217	0.0177-0.0180
3 months forward	2.397-2.427	0.0213-0.0216	0.0176-0.0178
3 months spot	2.423-2.459	0.02144-0.02156	0.0177-0.0179

Advice the company by calculating average contribution to sales ratio whether it should hedge its currency risk or not.



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(c) Following is the information about Mr. J's portfolio :

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Investment in shares of ABC Ltd. ₹ 200 lakh

Investment in shares of XYZ Ltd. ₹ 200 lakh

Daily standard deviation of both shares 1%

Co-efficient of correlation between both shares 0.3

Required :

Determine the 10 days 99% Value At Risk (VAR) for Mr. J's portfolio. Given : The Z score from the Normal Table at 99% confidence level is 2.33. (Show your calculations up to four decimal points)

1. Consider a portfolio consisting of a Rs. 200,00,000 investment in share XYZ and a Rs. 200,00,000 investment in share ABC. The daily standard deviation of both shares is 1% and that the coefficient of correlation between them is 0.3. You are required to determine the 10-day 99% value at risk for the portfolio?



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Investment

Weight

80%

$\gamma_{ABE, XY2}$

$XY2$

2,00,00,000

0.5

1%

≈ 0.3

ABE

2,00,00,000

0.5

1%

99% Confidence interval

10 Trading day



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(WN) G of Portfolio Risk (Portfolio S.D.)

$$= \sqrt{(\sigma_x w_x)^2 + (\sigma_y w_y)^2 + 2(\sigma_x w_x)(\sigma_y w_y)\rho_{xy}}$$

$$= \sqrt{(1 \times 0.5)^2 + (1 \times 0.5)^2 + 2(1 \times 0.5)(1 \times 0.5) \times 0.30}$$

$$= \sqrt{0.65} = \underline{0.806225\%}$$

Volatility in ₹

= Value of Portfolio $\times$ S.D %

= 4,00,00,000 $\times$ 0.806225%

= ₹ 3,22,490



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VAR

Expected loss at 99% Confidence level in 10
Trading days

= Volatility in ₹ $\times$ 2 Value $\times \sqrt{\text{No. of Trading days}}$

= ₹ 3,22,490 $\times$ 2.33 $\times \sqrt{10}$

= ₹ 23,76,140



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Practical Questions

1. Consider a portfolio consisting of a ₹ 200,00,000 investment in share XYZ and a ₹ 200,00,000 investment in share ABC. The daily standard deviation of both shares is 1% and that the coefficient of correlation between them is 0.3. You are required to determine the 10-day 99% value at risk for the portfolio?

ANSWERS/ SOLUTIONS

Answers to Theoretical Questions

1. Please refer paragraph 3.2
2. Please refer paragraph 2

Answers to the Practical Questions

1. The standard deviation of the daily change in the investment in each asset is ₹ 2,00,000 i.e. 2 lakhs. The variance of the portfolio's daily change is

$$V = 2^2 + 2^2 + 2 \times 0.3 \times 2 \times 2 = 10.4$$

$$\sigma \text{ (Standard Deviation)} = \sqrt{10.4} = ₹ 3.22 \text{ lakhs}$$

Accordingly, the standard deviation of the 10-day change is

$$₹ 3.22 \text{ lakhs} \times \sqrt{10} = ₹ 10.18 \text{ lakh}$$

From the Normal Table we see that z score for 1% is 2.33. This means that 1% of a normal distribution lies more than 2.33 standard deviations below the mean. The 10-day 99 percent value at risk is therefore

$$2.33 \times ₹ 10.18 \text{ lakh} = ₹ 23.72 \text{ lakh}$$



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5. (a) Mr. X holds the following portfolio :

Securities	Cost (₹)	Dividends (₹)	Market Price (₹)	Beta
Equity shares :				
A Ltd.	16,000	1,600	16,400	0.9
B Ltd.	20,000	1,600	21,000	0.8
C Ltd.	32,000	1,600	44,000	0.6
PSU Bonds	68,000	6,800	64,600	0.4

The risk-free rate of return is 12%.

Calculate the following :

- The expected rate of return on his portfolio using Capital Asset Pricing Model (CAPM).
- The average return on his portfolio. (Calculate up to two decimal points)



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- (b) TG Ltd., a multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of plant and machinery including installation) is estimated to be US \$ 500 million. The net working capital requirements are estimated at US \$ 100 million. The company follows straight line method of depreciation. Presently, the company is exporting 2 million units every year at a unit price of US \$ 100, its variable cost per unit being US \$ 50.

The Chief Financial Officer has estimated the following operating cost and other data in respect of the proposed project :



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- (a) Variable operating cost will be US \$ 25 per unit of production.
- (b) Additional cash fixed cost will be US \$ 40 million per annum.
- (c) Production and Sales capacity of the proposed project in India will be 5 million units.
- (d) Expected useful life of the proposed plant is 5 years with no salvage value.
- (e) Existing working capital investment for production and sale of 2 million units through exports was US \$ 20 million.
- (f) 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.
- (g) Applicable Corporate Income Tax rate is 30%.
- (h) Required rate of return for such project is 12%.

Assume that there will be no variation in the exchange rate of two countries, all profits will be repatriated and there will be no withholding tax.

Estimate the Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for 5 years are as under :

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

(Compute your workings to 4 decimals)



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- (c) Discuss briefly the key decisions which falls within the scope of financial strategy.

4

6. (a) Following are risk and return estimates for two stocks :

8

Stock	Expected returns (%)	Beta	Specific SD of expected return (%)
A	14	0.8	35
B	18	1.2	45

The market index has a Standard Deviation (SD) of 25% and risk free rate on Treasury Bills is 6%.

You are required to calculate :

- The standard deviation of expected returns on A and B.
- Suppose a portfolio is to be constructed with the proportions of 25%, 40% and 35% in stock A, B and Treasury Bills respectively, what would be the expected return, standard deviation of expected return of the portfolio ?



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• Ans 61a

$$\begin{aligned} \text{Cov}(AB) &= \beta_A \beta_B \sigma_m^2 \\ &= 0.8 \times 1.2 \times 25^2 = 600 \end{aligned}$$

$$\text{Cov}(AB) = \sigma_A \sigma_B r_{AB} = 600$$

Cal of Portfolio Risk.

$$= \sqrt{(\sigma_A w_A)^2 + (\sigma_B w_B)^2 + 2(\sigma_A w_A)(\sigma_B w_B)r_{AB}}$$

$$= \sqrt{(\sigma_A w_A)^2 + (\sigma_B w_B)^2 + 2w_A w_B \cdot \sigma_A \sigma_B \cdot r_{AB}}$$

$$= \sqrt{(0.5 \times 35)^2 + (0.5 \times 45)^2 + 2 \times 0.5 \times 0.5 \times 600}$$

$$= \sqrt{306.25 + 506.25 + 300} = \sqrt{1112.5}$$

$$= \underline{\underline{33.35}} \%$$



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- (b) Mr. X, a financial analyst, intends to value the business of PQR Ltd. in terms of the future cash generating capacity. He has projected the following after tax cash flows :

Year :	1	2	3	4	5
Cash flows (₹ in lakh)	1,760	480	640	860	1,170

It is further estimated that beyond 5th year, cash flows will perpetuate at a constant growth rate of 8% per annum, mainly on account of inflation. The perpetual cash flow is estimated to be ₹ 10,260 lakh at the end of the 5th year.

Required :

- What is the value of the firm in terms of expected future cash flows, if the cost of capital of the firm is 20%.
- The firm has outstanding debts of ₹ 3,620 lakh and cash / bank balance of ₹ 2,710 lakh.
Calculate the shareholder value per share if the number of outstanding shares is 151.50 lakh.
- The firm has received a takeover bid from XYZ ltd. of ₹ 225 per share. Is it a good offer ?
[Given : PVIF at 20% for year 1 to Year 5 : 0.833, 0.694, 0.579, 0.482, 0.402]

- c) State the main problems faced in Securitization in India ?

OR

List the main objectives of International Cash Management.



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