Question 19.

	Rs.
Sales	25,00,000
(–) Variable Cost	17,00,000
Contribution	8,00,000
(–) Fixed Cost	4,00,000
E.B.I.T. or OP	4,00,000
(–) Interest on Debt (15% on 10,00,000)	1,50,000
E.B.T.	2,50,000

(a) $OL = \frac{C}{EBIT} = \frac{8,00,000}{4,00,000} = 2$

(b) $FL = \frac{EBIT}{EBT} = \frac{4,00,000}{2,50,000} = 1 \cdot 6$

(c) $CL = \frac{C}{EBT} = \frac{8,00,000}{2,50,000} = 3 \cdot 2$

If Increase in EBIT = 20% then Increase in Sales = ?

We know that Degree of Operating Leverage :

$$= \frac{\text{Percentage Change in EBIT}}{\text{Percentage Change in Sales}}$$

By putting the given values in above formula, we get :

$$2 = \frac{20\%}{\%\text{ Change in Sales}}$$

$$\therefore \%\text{ Change in Sales} = \frac{20\%}{2} = 10\%$$

Question 20.

	Rs.
Sales	1,50,000
(–) Variable Cost (50% of Sales)	75,000
Contribution	75,000
(–) Fixed Operating Costs	25,000
E.B.I.T. or OP	50,000
(–) Interest on Debt	10,000
E.B.T.	40,000

(i) $$OL = \frac{C}{EBIT} = \frac{75,000}{50,000} = 1{\cdot}5$$

(ii) $$FL = \frac{EBIT}{EBT} = \frac{50,000}{40,000} = 1{\cdot}25$$

(iii) $$CL = \frac{C}{EBT} = \frac{75,000}{40,000} = 1{\cdot}875$$

(iv) We know that Degree of Operating Leverage :

$$= \frac{\text{Percentage Change in EBIT}}{\text{Percentage Change in Sales}}$$

By putting the given values, we get :

$$1{\cdot}5 = \frac{\text{Percetage Change in EBIT}}{5\%}$$

$$\therefore \%\text{ Change in EBIT} = 1{\cdot}5 \times 5 = 7{\cdot}5\%$$

(v) We know that Degree of Combined Leverage :

$$= \frac{\%\text{ Change in EBT}}{\%\text{ Change in Sales}}$$

By putting the given values, we get :

$$1{\cdot}875 = \frac{\%\text{ Change in EBT}}{5\%}$$

$$\therefore \%\text{ Change in EBT} = 1{\cdot}875 \times 5 = 9{\cdot}375\%$$

If sales increased by 5%, EBIT will increase by 7·5% and EBT will increase by 9·375%.

Question 21.

Calculation of Operating Leverage

	Situation A	Situation B	Situation C
	Rs.	Rs.	Rs.
Sales (1,000 × 20)	20,000	20,000	20,000
(–) Variable Cost (1,000 × 15)	15,000	15,000	15,000
Contribution	5,000	5,000	5,000

(–) Fixed Cost	2,000	3,000	4,000
E.B.I.T. or O.P.	3,000	2,000	1,000
$O.L. = \frac{C}{E.B.I.T.}$	5,000	5,000	5,000
	3,000	2,000	1,000
	= 1·67	= 2·5	= 5

Calculation of FL under Financial Plan I

	Situation A	Situation B	Situation C
	Rs.	Rs.	Rs.
E.B.I.T. (As Above)	3,000	2,000	1,000
(–) Interest on Debt (10% of 6,000)	600	600	600
E.B.T.	2,400	1,400	400
$F.L. = \frac{E.B.I.T.}{E.B.T.}$	3,000	2,000	1,000
	2,400	1,400	400
	= 1·25	= 1·43	= 2·5

Calculation of FL under Financial Plan II

	Situation A	Situation B	Situation C
	Rs.	Rs.	Rs.
E.B.I.T. (As Above)	3,000	2,000	1,000
(–) Interest on Debt (10% of 3,000)	300	300	300
E.B.T.	2,700	1,700	700
$F.L. = \frac{E.B.I.T.}{E.B.T.}$	3,000	2,000	1,000
	2,700	1,700	700
	= 1·11	= 1·18	= 1·43

Calculation of FL under Financial Plan III

	Situation A	Situation B	Situation C
	Rs.	Rs.	Rs.
E.B.I.T. (As Above)	3,000	2,000	1,000
(–) Interest on Debt (10% of 9,000)	900	900	900
E.B.T.	2,100	1,100	100
$F.L. = \frac{E.B.I.T.}{E.B.T.}$	3,000	2,000	1,000
	2,100	1,100	100
	= 1·43	= 1·82	= 10

Question 22.

Statement Showing Computation of Operating Leverage

	A	B	C
Sales 800 units @ Rs. 15	12,000	12,000	12,000
(–) Variable Cost 800 units @ Rs. 10	8,000	8,000	8,000
Contribution (C)	4,000	4,000	4,000

(–) Fixed Cost (F)	1,000	2,000	3,000
Operating Profit (OP) or EBIT	3,000	2,000	1,000
Operating Leverage = $\frac{C}{OP}$	1·33	2·00	4·00

Statement Showing Computation of Financial Leverage

Particulars	Financial Plan		
	I	II	III
	Rs.	Rs.	Rs.
Situation A :			
Operating Profit (OP)	3,000	3,000	3,000
Interest on Debt @ 12%	600	300	900
EBT	2,400	2,700	2,100
Financial Leverage = $\frac{OP}{EBT}$	= 1·25	= 1·11	= 1·43
Situation B :			
Operating Profit (OP)	2,000	2,000	2,000
Interest on Debt @ 12%	600	300	900
EBT	1,400	1,700	1,100
Financial Leverage = $\frac{OP}{EBT}$	= 1·43	= 1·18	= 1·82
Situation C :			
Operating Profit (OP)	1,000	1,000	1,000
Interest on Debt @ 12%	600	300	900
EBT	400	700	100
Financial Leverage = $\frac{OP}{EBT}$	= 2·5	= 1·43	= 10·00

Combination of Operating Leverage and Financial Leverage

Highest Value :

(Situation C = 4·00) × (Financial Plan III = 10·00) = 40·00

Least Value :

(Situation A = 1·33) × (Financial Plan II = 1·11) = 1·48

Question 23.

	X Ltd.	Y Ltd.
	Rs.	Rs.
Sales	28,00,000	28,00,000
(–) Variable Cost $\frac{28}{40} \times 100$ = 70% of Sales	19,60,000	19,60,000
Contribution	8,40,000	8,40,000
(–) Fixed Costs	6,80,000	6,80,000
EBIT (Operating Profit)	1,60,000	1,60,000
(–) Interest	Nil	80,000
EBT	1,60,000	80,000

(–) Taxes @ 50%	80,000	40,000
EAT	80,000	40,000
(i) DOL = C/EBIT	5·25	5·25
(ii) DFL = EBIT/EBT	1	2
(iii) DCL = C/EBT	5·25	10·5

The DCL of X Ltd. is higher due to financial leverage.

Question 24.

Sales	Rs. 10,00,000
(–) Variable Costs	Rs. 7,00,000
Contribution	Rs. 3,00,000
(–) Operating fixed costs *i.e.*, fixed costs excluding interest (2,00,000 – 50,000)	Rs. 1,50,000
EBIT	Rs. 1,50,000
(–) Interest	Rs. 50,000
EBT	Rs. 1,00,000

(i) OL = C/EBIT = 3,00,000/1,50,000 = 2

(ii) FL = EBIT/EBT = 1,50,000/1,00,000 = 1·5

(iii) CL = C/EBT = 3,00,000/1,00,000 = 3

To Double the EBIT, Sales should be Increased by :

$$\frac{\% \text{ Change in EBIT}}{\text{OL}} = \frac{100\%}{2} = 50\%$$

∴ Additional Sales to double EBIT = 10,00,000 × 50% = Rs. 5,00,000

Question 25.

Total Assets Turnover = 3; Total Assets = Rs. 4,00,000

∴ Turnover (Sales) = 3 × 4,00,000 =	Rs. 12,00,000
(–) Variable Cost (40% of 12,00,000)	Rs. 4,80,000
Contribution	Rs. 7,20,000
(–) Fixed Operating Cost	Rs. 2,00,000
E.B.I.T.	Rs. 5,20,000
(–) Interest on Debenture $\left(1,60,000 \times \frac{10}{100}\right)$	Rs. 16,000
E.B.T.	Rs. 5,04,000

(i) $\text{OL} = \frac{\text{C}}{\text{EBIT}} = \frac{7,20,000}{5,20,000} = 1·385$

(ii) $\text{FL} = \frac{\text{EBIT}}{\text{EBT}} = \frac{5,20,000}{5,04,000} = 1·032$

(iii) $\text{CL} = \frac{\text{C}}{\text{EBT}} = \frac{7,20,000}{5,04,000} = 1·429$

Question 26.

Sales $\left(3,00,000 \times \frac{100}{20}\right)$	Rs. 15,00,000
(–) Variable Costs $\left(15,00,000 \times \frac{60}{100}\right)$	Rs. 9,00,000
Contribution	Rs. 6,00,000

(–) Fixed Costs	Rs. 3,00,000
EBIT (Operating Profit)	Rs. 3,00,000
(–) Interest on Debentures (10% of Rs. 5,00,000)	Rs. 50,000
EBT	Rs. 2,50,000

(i) FL = EBIT/EBT = 3,00,000/2,50,000 = 1·2

(ii) OL = C/EBIT = 6,00,000/3,00,000 = 2

(iii) CL = C/EBT = 6,00,000/2,50,000 = 2·4

Question 27.

Total Assets = Rs. 30,000; Total Assets Turnover = 2

∴ Turnover (Sales) = 30,000 × 2 = Rs. 60,000

	Capital Structure	
	I Plan	II Plan
	Rs.	Rs,
Sales	60,000	60,000
(–) Variable Cost (60%)	36,000	36,000
Contribution	24,000	24,000
(–) Fixed Costs	10,000	10,000
E.B.I.T.	14,000	14,000
(–) Int. on Debenture @ 10%	1,000	3,000
E.B.T.	13,000	11,000
$OL = \frac{C}{EBIT}$	$\frac{24,000}{14,000} = 1·71$	$\frac{24,000}{14,000} = 1·71$
$FL = \frac{EBIT}{EBT}$	$\frac{14,000}{13,000} = 1·08$	$\frac{14,000}{11,000} = 1·27$
$CL = \frac{C}{EBT}$	$\frac{24,000}{13,000} = 1·85$	$\frac{24,000}{11,000} = 2·18$

Question 28.

Sales (1,00,000 units × Rs. 10 per unit)	Rs. 10,00,000
(–) Variable Costs (1,00,000 units × Rs. 7 per unit)	(–) Rs. 7,00,000
Contribution	Rs. 3,00,000
(–) Fixed Costs	Rs. 1,00,000
Operating Profit (EBIT)	Rs. 2,00,000
(–) Interest on Debenture (7·5% of Rs. 2,00,000)	Rs. 15,000
EBT	Rs. 1,85,000
(–) Taxes @ 50%	Rs. 87,500
EAT	Rs. 87,500
(–) Dividend on Preference Shares (12·5% of Rs. 1,00,000)	Rs. 12,500
Earnings to Equity Shareholders	Rs. 75,000

(i) OL = C/EBIT = 3,00,000/2,00,000 = 1·5

(ii) $$FL = \frac{EBIT}{EBIT - INT - \left(PD \times \frac{1}{1-T}\right)}$$

$$= \frac{2,00,000}{2,00,000 - 15,000 - \left(12,500 \times \frac{1}{1-0·50}\right)}$$

$$= 2,00,000/1,60,000 = 1{\cdot}25$$

(iii) $CL = OL \times FL = 1{\cdot}5 \times 1{\cdot}25 = 1{\cdot}875$