

$$\begin{aligned}
 &= ₹ 330 \text{ Cr.} \\
 \text{Interest} &= ₹ 330 \text{ Cr.} \times 16\% \\
 &= 52.80 \text{ Cr.} \\
 \text{Post Buy Back EPS} &= \frac{200 \text{ Cr.} - 52.80 (1 - 0.30)}{0.8 \text{ Cr.}} \\
 &= ₹ 203.80
 \end{aligned}$$

**Question – 58**

High Growth Ltd. (HGL) was having an excellent growth over a number of years. The Board of Directors is considering a proposal to reward its shareholders by buying back 20% shares at a premium. The premium is to be paid by raising a loan from the Bank. The interest on loan is to be serviced by internal accruals as supported by the financials of HGL. The company has a market capitalization of ₹ 15,000 crore and the current Earnings Per Share (EPS) is ₹ 600 with a Price Earning Ratio (PER) of 25. The Board expects a post buy back Market Price per Share (MPS) of ₹ 10,000. The PER, post buy back will remain the same. The loan can be availed at an interest rate of 16% p.a.

Applicable corporate tax rate is 30%.

You are required to calculate:

- (i) The interest amount which can be paid for availing the bank loan.
- (ii) The loan amount to be raised.
- (iii) Buy back premium per share.

**(Exam May – 2023)**

**Solution:****(i) Interest Amount**

$$\begin{aligned}
 \text{MPS before buy back} &= \text{EPS} \times \text{P/E} \\
 &= 600 \times 25 = ₹ 15,000
 \end{aligned}$$

No. of shares before buy back

$$\frac{₹ 15,000 \text{ Cr.}}{15,000} = 1 \text{ Cr.}$$

No. of shares buy back = 1 Cr.  $\times$  20% = 0.2 Cr.

$$\begin{aligned} \text{Post buy back EPS} &= \frac{\text{MPS}}{\text{P/E}} \\ &= \frac{10,000}{25} = 400 \end{aligned}$$

PAT before buy back = EPS  $\times$  No.  
= 600  $\times$  1 Cr. = ₹ 600 Cr.

Let assume interest amount be x

$$= \frac{600 - x(1 - 0.3)}{0.8} = 400 \text{ Cr.}$$

Interest amount = 400 Cr.

**(ii) Loan Amount** =  $\frac{400}{16\%} = ₹ 2,500 \text{ Cr.}$

**(iii) Buy Back Premium per Share**

$$\begin{aligned} \text{Premium per share} &= \frac{2,500 \text{ Cr.}}{0.2 \text{ Cr.}} \\ &= ₹ 12,500 \end{aligned}$$

Buy back price = 12,500 + 15,000 = 27,500

**ICAI SOLUTION:**

**(i)** The interest amount which can be paid for availing the bank loan

Current Market Price per Share = ₹ 600  $\times$  25 = ₹ 15,000

$$\begin{aligned} \text{No. of Shares before Buyback} &= \frac{\text{Market Capitalization}}{\text{Market Price of Share}} \\ &= \frac{15,000 \text{ Crore}}{15,000} = 1 \text{ Crore} \end{aligned}$$

No. of Shares proposed to Buyback = 20% of 1 crore = 20 lakh

Total No. of Share after Buyback = 1 crore – 20 lakh = 80 lakh

Post Buy back Market Price per Share	= ₹ 10,000
PE Ratio	= 25
Post Buyback EPS	$= \frac{10,000}{25} = ₹ 400$
EAT before Buyback	= ₹ 600 × 1 crore = ₹ 600 crore
EBT before Buyback	$= \frac{600}{(1 - 0.30)} = ₹ 857.1429$ crore
EAT after Buyback	= ₹ 400.00 × 80 lakh = ₹ 320 crore
EBT after Buyback	$= \frac{320}{(1 - 0.30)} = ₹ 457.1429$ crore

Interest which can be paid for availing bank loan:

EBT before Buyback	₹ 857.1429 crore
(-) EBT after Buyback	₹ 457.1429 crore
	<hr/>
	₹ 400.0000 crore

Alternatively, it can also be computed as follows:

Pre Buy back Market Capitalization (A)	₹ 15000 crore
Pre Buy back EPS (B)	₹ 600
Pre Buy back PER (C)	25
Pre Buy back Market Price Per Share (₹ 600 × 5) D = B × C	₹15000
Pre Buy back No. of Shares (A)/ (D)	1 Crore
Post Buy back EPS (A) (₹ 10,000/ 25)	₹ 400
Post Buy back No. of shares (B)	80 Lakh
Post Buy back Earning (C) = (A) × (B)	₹ 320 crore
Pre Buy back Earning 1 Crore × ₹ 600 (D)	₹ 600 crore

Post Tax Earning available for interest payment (D) – (C)	₹ 280 Crore
Pre- Tax amount of Interest $\frac{280 \text{ Crore}}{1 - 0.30}$	₹ 400 Crore

(ii) Loan Amount raised =  $\frac{400 \text{ Crore}}{0.16} = ₹ 2,500 \text{ Crore}$

(iii) Buyback Premium per Share

Amount of Loan for Buyback of 20 % Shares = ₹ 2,500 crore

No. of Shares Buyback = 20 Lakh

Buyback price per Share = ₹ 2,500 Crore/ 20 Lakh = ₹ 12,500

Market Price after Buyback = ₹ 10,000

Buyback Premium Per Share = ₹ 12,500 – ₹ 10,000 = ₹ 2,500

Alternatively, it can also be computed as follows:

Amount of Loan (A)	₹ 2500 crore
No. of Shares to be bought back (B)	20 Lakh
Price Per Share to be paid (C) = (A)/ (B)	₹ 12,500
Post Buy back Share Price (D)	₹ 10,000
Buy Back Premium per share (C) – (D)	₹ 2,500

### VALUATION OF RIGHT

#### Question – 59

ABC Limited's shares are currently selling at ₹ 13 per share. There are 10,00,000 shares outstanding. The firm is planning to raise ₹ 20 lakhs to Finance a new project.

Required:

What are the ex-right price of shares and the value of a right, if

- (i) The firm offers one right share for every two shares held.
- (ii) The firm offers one right share for every four shares held.

- (iii) How does the shareholders' wealth change from (i) to (ii)? How does right issue increases shareholders' wealth?

**(SM TYK – 02)**

**Solution:**

**(i) One share for every 2 shares**

$$\text{Right shares} = 10,00,000 \times \frac{1}{2} = 5,00,000 \text{ shares}$$

$$\text{Offer price} = \frac{\text{₹ } 2,00,00,000}{5,00,000} = \text{₹ } 4$$

$$\text{Ex-Right price} = \frac{(10,00,000 \times 13) + (5,00,000 \times 4)}{15,00,000} = \text{₹ } 10$$

$$\text{Value of right per shares} = 13 - 10 = 3$$

$$\text{Value of right} = 3 \times 2 = \text{₹ } 6$$

**(ii) One share for every 4 shares**

$$\text{One of shares} = 10,00,000 \times \frac{1}{4} = 2,50,000 \text{ shares}$$

$$\text{Offer price} = \frac{\text{₹ } 20,00,000}{2,50,000} = \text{₹ } 8$$

$$\text{Ex-Right} = \frac{(10,00,000 \times 13) + (2,50,000 \times 8)}{12,50,000} = 12$$

$$\text{Value of right per shares} = 13 - 12 = \text{₹ } 1$$

$$\text{Value of right} = \text{₹ } 1 \times 4 \text{ shares} = \text{₹ } 4$$

$$\text{Before right} = 100 \text{ share} \times 13 = \text{₹ } 1,300$$

**One share for 2 shares**

$$\text{Value of shares } [150 \times 10] = \text{₹ } 1,500$$

$$(-) \text{ Buy right shares } [50 \times 4] = \text{₹ } 200$$

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$$= \text{₹ } 1,300$$

**One share for 4 shares**

Value of shares (125 × 12)	= ₹ 1,500
(-) Buy right shares (25 × 8)	= ₹ 200
	= ₹ 1,300

No change in wealth.

**Question – 60**

AMKO Limited has issued 75,000 equity shares of ₹ 10 each. The current market price per share is ₹ 36. The company has a plan to make a rights issue of one new equity share at a price of ₹ 24 for every four shares held.

You are required to:

- (i) Calculate the theoretical post-rights price per share.
- (ii) Calculate the theoretical value of the right alone.

**(Exam November – 2018)**

**Solution:**

**(i) Calculation of theoretical Post-rights (ex-right) price per share:**

$$\text{Ex-right value} = \left[ \frac{MN + SR}{N + R} \right]$$

Where,

- M = Market price,
- N = Number of old shares for a right share
- S = Subscription price
- R = Right share offer

$$= \left[ \frac{₹ 36 \times 4 + ₹ 24 \times 1}{4 + 1} \right]$$

$$= ₹ 33.60$$

**(ii) Calculation of theoretical value of the rights alone:**

= Ex-right price – Cost of rights share

$$= ₹ 33.60 - ₹ 24 = ₹ 9.60$$

Or,

$$= \frac{₹ 33.60 - ₹ 24}{4} = ₹ 2.40$$

**Question – 61**

Aggressive Ltd. is proposing to fund its expansion plan of ₹ 12 crore by making a rights issue. The current market price (CMP) is ₹ 40. The Board is willing to offer a discount of 20% on the CMP for the rights issue. The Board is also desirous that the fall in Ex-right price of the shares be restricted to 10% of CMP.

CALCULATE:

- (1) The number of new equity shares to be offered for each rights held,
- (2) Theoretical value of right and
- (3) The total number of equity shares to be issued.

(MTP Oct – 2022)

**Solution:**

- (1) Let assume number of right shares be x**

$$\frac{(1 \times 40) + (x \times 32)}{x + 1} = 36$$

$$36 + 36x = 40 + 32x$$

$$x = 1$$

It means 1:1

- (2) Value of right**

$$= \text{CMP} - \text{Ex right}$$

$$= 40 - 36 = 4$$

- (3) No. of shares to be issued**

$$= \frac{1,20,00,000}{32} = 0.375 \text{ Cr.}$$

## MONEY MARKET INSTRUMENTS

**Question – 62**

Suppose Govt. Pays ₹ 5,000 at maturity for 91 days Treasury bill. If Mr. Y is desirous to earn an annualized discount rate of 3.5%, then how he can pay for it.

**Solution:**

Suppose X be the maximum amount Mr. Y can pay for Treasury bill. Then,

$$= \frac{\text{₹ } 5,000 - X}{\text{₹ } 5,000} \times \frac{360}{91} = 0.035$$

$$= \text{₹ } 5,000 - X$$

$$= \text{₹ } 44.24$$

$$X = \text{₹ } 4,955.76$$

**Question – 63**

RBI sold a 91-day T-bill of face value of ₹ 100 at an yield of 6%. What was the issue price?

(SM TYK – 28)

**Solution:**

Let the issue price be X

By the terms of the issue of the T-bills:

$$6\% = \frac{100 - x}{x} \times \frac{365}{91} \times 100$$

$$\frac{6 \times 91 \times X}{36,500} = (100 - x)$$

$$0.01496x = 100 - x$$

$$x = \frac{100}{1.01496} = \text{₹ } 98.53$$

**Question – 64**

Wonderland Limited has excess cash of ₹ 20 lakhs, which it wants to invest in short term marketable securities. Expenses relating to investment will be ₹ 50,000.

The securities invested will have an annual yield of 9%

The company seeks your advice

- (i) as to the period of investment so as to earn a pre-tax income of 5%. (discuss)
- (ii) the minimum period for the company to breakeven its investment expenditure overtime value of money.

**(SM TYK – 29)**

**Solution:**

**(i) Pre-tax Income required on investment of ₹ 20,00,000**

Let the period of Investment be 'P' and return required on investment ₹ 1,00,000 (₹ 20,00,000 × 5%)

Accordingly,

$$(\text{₹ } 20,00,000 \times \frac{9}{100} \times \frac{P}{12}) - \text{₹ } 50,000 = \text{₹ } 1,00,000$$

$$P = 10 \text{ months}$$

**(ii) Break-Even its investment expenditure**

$$(\text{₹ } 20,00,000 \times \frac{9}{100} \times \frac{P}{12}) - \text{₹ } 50,000 = 0$$

$$P = 3.33 \text{ months}$$

**Question – 65**

A bond is held for period of 45 days. The current discount yield is 6 per cent per annum. It is expected that current yield will increase by 200 basis points and current market price will come down by ₹ 2.50.

Calculate :

- i Face value of the Bond and

ii. Bond Equivalent yield

(Exam May – 2019)

**Solution:**

**(i) Face Value of the Bond**

a.	Current Market Price*	45 days	6	0.9925
b.	Current Market Price*	45 days	8	0.9900
c.	Difference in price per Unit (a)–(b)			0.0025
d.	Difference in price			₹ 2.50
e.	Face Value of Bond (d)/(c)			₹ 1,000
f.	Current Market Price (a) × (e)		6	₹ 992.50
g.	Current Market Price (a) × (e)		8	₹ 990.00

\*1 – [(Discount Rate/100) (45/360)]

**(ii) Bond Equivalent Yield**

At the rate of 6%	$\frac{1,000 - 992.50}{992.50} \times \frac{360}{45} \times 100 \dagger$	6.05
At the rate of 8%	$\frac{1,000 - 990.00}{990.00} \times \frac{360}{45} \times 100 \dagger$	8.08

**Alternative Solution if 365 day year are assumed**

**(i) Face Value of the Bond**

a.	Current Market Price*	45 days	6	0.9926
b.	Current Market Price*	45 days	8	0.9901
c.	Difference in price per Unit (a) – (b)			0.0025
d.	Difference in price			₹ 2.50
e.	Face Value of Bond (d)/(c)			₹ 1,000
f.	Current Market Price (a) × (e)		6	₹ 992.60
g.	Current Market Price (b) × (e)		8	₹ 990.10

\*1 – [(Discount Rate/100) (45/360)]

**(ii) Bond Equivalent Yield**