Compound Interest : Interest earned on both the principal and the interest reinvested from prior periods.

Discount Factor or Rate : The rate of interest or cut off rate used to find the present value of future amount.

Future Value : The amount an investment is worth after a period.

Perpetuity : The cash flows of an annuity is for an indefinite period. It is also called CONSOLS.

Present Value : The current value of future cash flows discounted at the discount rate.

Simple Interest : The interest earned on original principal amount.

2.8 ANSWERS TO CHECK YOUR PROGRESS

A 4) Rs.13382; 5) Rs.7,846

B 1) (a) False (b) False (c) True (d) True (e) False

2.9 TERMINAL QUESTIONS / EXERCISES

1) Explain "Time Value of Money". Wliat is the role of interest rate in it ?

2) A person deposits Rs. 1000 today, Rs. 2000 in two years and Rs. 5000 in five years. He withdraws Rs. 1500 in three year and Rs. 1000 in seven years. 1-low must he will have after 8 years if interest relate is 7%? What is the present value of these cash flows?

3) If a deposit of Rs. 3000 is made today and the interest received is 10% yearly, how much the deposit will grow after 7 years and 11 years?

4) You want to accumulate Rs. 20,000 by the end of 10 years. The discount rate is 12%. How much should you have annually?

5) Find the present value of following cash follows, assuming 5% interest rate.

Year	**cash flows**
I	Rs. 1000
2	Rs. 2000
3	Rs. 3000
4	Rs 4000
5	Rs. 5000

UNIT 3 VALUATION OF SECURITIES

Structure

3.0 OBJECTIVES

After studying this unit, you should bc able lo:

- explain the basic valuation model;
- examine tlie valuation methods of bonds; and
- describe tlie valuation process of preference shares and equity shares.

3.1 INTRODUCTION

If an investor wants to invest in securities, what will lie do? I-le will buy only those securities that may provide him maximum return. I-Iis decision to buy or sell a security is influenced by his own value and price of that security. Thus, an investor would generally follow two steps to make an investment decision. First, lie will examine tlie risk-return of the security for the future holding period. This is known as security analysis. Second, lie will compare tlie risk-return of different securities with each other. This is called 'Port folio analysis'.

Tlie basic valuation process of securities consider three factors of cost, benefits and uncertainty. The performance of a firm is limited to the performance of the industry to which it belongs, which in turn depends upon tlic performance of tlic economy and the market in general. The performance of a firm can be judged from the price movement of its securities in the market. The value determines price and both variables change randomly. In this unit we will examine the basic valuation model and valuation of bonds, preference shares and equity shares.

3.2 THE BASIC VALAUTION MODEL

An asset whether financial or real derives its value from the cash flows associated with it. The cash flows must be evaluated on a present value basis. The value of an

asset is equal to the present value of the benefits associated with it. Thus, the value of any asset at time 0 may be calculated by the following formula :

$$V_o = \frac{cf_1}{(1+i)^2} + \frac{cf_2}{(1+i)^2} + \ldots\ldots + \frac{cf_n}{(1+i)^n}$$

Where

V_o = value at time 0

cf = cash flows in the year

i = annual interest rate

n = number of years

Illustration 1 : **A** five year asset with cash flows of Rs. 2000 in year one, Rs. 3000 in year two, Rs. 4,000 in year three Rs. 5,000 in year four and Rs. 6,000 in year five would be valued at Rs. 17,462 if rate of interest is 4%.

Year	Cash flows (Rs.)		PVIF @ 4 %	Discounted cash flow (Rs.)
1	2000	×	0.962	1924
2	3000	×	0.925	2775
3	4000	×	0.889	3556
4	5000	×	0.855	4275
5	6000	×	0.822	4932
	20,000			17,462

The discounted value of cash flows of Rs. 20,000 for the asset is Rs. 17,462. This means that the price (P_o) of the asset at time 0 would be Rs. 17,462, if the market for the asset is efficient. All efficient market is defined in terms of its characteristics its prices have i.e., prices always fully reflect all available information. So in an efficient market $V_o = P_o$ Thus to value or price an asset in an efficient market, one has to identify the cash flows associated with the asset and discount them to present value.

3.3 VALUATION OF BONDS

Bonds/debentures are corporate securities that represent debt of a company. In case of a bond, par value is the value stated on the face of the bond. It carries a specific rate of interest called the coupon/interest rate. It has a maturity period ranging from 5 to 20 years.

The intrinsic value (realisable value or economic value) of a bond or any fixed income security is equal to the present value of the expected cash flows.

The coupon/interest payments and the principal repayment at inaturity are known. The present value is determined by discounting these future payments at an appropriate rate or market yield. The formula used is as follows:

$$PV = \sum_{t=1}^{n} \frac{I}{(1+r)^t} + \frac{TV}{(1+r)^n}$$

PV = present value of the security at time period zero

I = interest / coupon rate

TV = terminal value at maturity (par/discount/premium)

r = the required rate of return or market yield

n = number of years to maturity

Illustrations 2 : A company issues 5% Rs. 1000 bonds with 5 years to maturity. The other similar bonds are sold to yield 10%. The payment of interest is half yearly. The PV will be calculated as follows:

Years	Cash flow (Rs.)	PVIP @5%	Discounted Cash flow (Rs.)
1-10	25	7.722	193.05
10	1000	0.614	614.00
		PV =	807.05

The coupon payment is Rs. 25 each six months and maturity period is 2 x 5 periods of six month each = 10 and market rate is 10% per year i.e., 5% for six month.

You should note that bond values are effected by relationship between required rate of return, coupon rate and number of years to maturity.

Effect of change in required rate of return

In the above example, if the required rate is 2.5%, 3% or 2% half yearly, what will be the present value in each case? It will be as follows :

1) If the required rate of return is 2.5% , PV will be Rs. 1000 i.e., (25 x 8.75206 + 1000 x 0.7812)

2) If the required rate of return is 3% PV will 958.25 i.e., (25 x 8.53020 + 1000 x 0.74409)

3) If the required rate of return is 2% PV will be Rs. 1045 i.e., (25 x 8.98259 + 1000 x 0.82035)

From the above we can conclude :

1) when the required rate of return is equal to coupon rate, the value of bond is equal to its par value.

2) If the required rate of return is greater than the coupon rate, the value of a bond is less than its par value i.e., at a discount. Further this discount on bond declines as maturity approaches.

3) When the required rate of return is less than coupon rate, the value of bond is more than its par value i.e., at a premium. Moreover, this premium in sucli case declines as the maturity approaches.

3.3.1 Effect of Maturity

Let us see the effect of maturity period on a bond price.

The lower the maturity of a bond, the greater is its price change in response to a given change in the required rate of return. Consider the following data:

	Bond A	Bond B
Par value	Rs. 1000	Rs. 1000
Coupon rate	10%	10%
Maturity	5 years	15 years
Required rate of return	12%	12%
Market price	Rs. 927.5	Rs. 864

If the required rate of return rises to 14% or falls to 10%, then the price of these bonds will change as follows:

	Bond A	Bond B
At 14%	Rs. 862.3	Rs. 754.2
At 10%	Rs. 1000	Rs. 1000

From the above we find that percentage change in the bond with larger maturity (Bond B) is higher compared to the percentage change in the bond with shorter maturity (Bond A) for a given change in the required rate of return.

3.3.2 Yield to Maturity (YTM)

There are several measures of returns on bonds that are used. These measures are coupon rate, current yield and the yield to maturity. Coupon rate is readily available. The current yield can be calculated by the following formula :

$$\text{Current Yield} : \frac{\text{Coupon rate per year}}{\text{Current market price}}$$

Current yield is a superior measure to coupon rate because it is based on current market price. But most widely used measure of fixed income securities is Yield to Maturity. YTM can be defined as the indicated (promised) compounded rate of return an investor will receive from a bond purchased at current market price and held to maturity. It is the interest rate that equates the bond's price to the discounted cash flows of its promised cash flows. There are two methods used for YTM (i) Linear interpolation method and (ii)Approximation method.

Linear Interpolation **Method**

Under this method YTM is similar to calculating Internal Rate of Return. To use this method help of computer and calculator is better. Under this method two rates of return are assumed to find the value of YTM.

Illustration **3** : An investor purchased a 12% Rs. 600 bonds at par five years ago. The current market price is Rs. 750. The YTM can be estimated as follows :

$$MP = \sum_{t=1}^{n} \frac{I}{(1+YTM)^t} + \frac{TV}{(1+YTM)^n}$$

$$\text{Rs. } 750 = \frac{72}{(1+YTM)^1} + \frac{600}{(1+YTM)^5}$$

MP = Market price, TV = Terminal value, I = yearly interest

What is now required is the value of YTM which equates Rs. 750 with the sum of present values of Rs. 72 for 5 years and of Rs. 600 receivable at the end of fifth year. A process of trial and error is used. Two rates are assumed say 15% and 20%. The PV at 20% is Rs. 72 ×2.9906 + Rs. 600. × .8333 = Rs. 715.32 and at 15% PV is Rs. 72 x 3.39223 + Rs.600 x 0.86057 = Rs. 760.58. Now the estimate can be made by linear interpolation method.

Note: The PV @ 12% is Rs. 795.25, which is higher than MP Rs. 750. So a higher rate 15% is selected. At 15% PV is Rs. 760.58, which is higher than MP. At 20% PV is Rs. 715.32, which is lower than MP. So it means YTM lies between these two rates.

$$\text{YTM} = 20\% + \frac{760.58 - 750}{760.58 - 715.32} \times (20\% - 15\%)$$

$$= 20\% + \frac{10.58}{45.26} \times 5\%$$

$$= 20\% + 1.16$$

$$= 21.16\%$$

The procedure for linear interpolation is as follows :

1) Find the difference between PV at lower rate and MP is (10.34)

2) Divide step I by the difference between present values at two rates (45.12)

3) Lastly, add to the lower rate the product of step 2 and then multiply by the difference between both rates.

Approximation Method

$$\text{YTM} = \frac{I + (FV - MP) / n}{(FV + MP) / 2}$$

FV = face value

MP = market Price

n = number of years

I = annual interest payment

Another formula that may be used is as follows:

$$\frac{I + (FV - MP) / n}{0.4\ FV + 0.6MP}$$

Check Your Progress A

1) What is formula to value bond under the basic valuation model?

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2) How is Interpolation different from Approximation method?

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3) Find YTM if you buy a bond of Rs. 1000 face value at 10% coupon rate for 4 years maturity. You paid Ks. 1032.40. Interest is paid annually.

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3.4 VALUATION OF PREFERENCE SHARES

Although preference sliare (or preferred stock) is an equity instrument, it is easily valued. Technically it is a perpetuity. Preferences shares are hybrid securities as they have features of a bond as well as of equity shares. They are of various types – redeemable, irredeemable, cumulative, non-cumulative. They are less risky because their dividends are specified and are paid before equity shares.

Dividend on preference shares is assumed to be perpetual payments. To value a perpetuity, simply take the annual return and divide it by an appropriate discounted rate. The annual return for a preference share would be dividend rate, which is found by taking the discount rate and multiplying it by the par value of the preference share. The formula for valuing preference share is:

$$P_o = \frac{D}{r_o} \quad \text{or} \quad r = \frac{D}{P_o}$$

Where

D = annual dividend

r = investors required rate of return i.e., current yield

P_o = value of the perpetuity today

Illustration 4 : A preference share that pays a dividend of Rs. 5.25 has a par value of Rs. 100. If the investor's required rate of return is 9%, what would be its price?

$$P_o = \frac{5.25}{0.09} = \text{Rs. } 58.33$$

If market price is known and current yield on preference share is not given it can be found by dividing the dividend by market price, So in the above example it will be:

$$r = \frac{5.25}{58.33} = 9\%$$

Preference share may be redeemable (callable) after a period. The probable call date is used as an investment terminal date to evaluate. The yield up to call date is calculated as follows:

$$YTC = \frac{Dt + \frac{CP - MP}{n}}{(MP + CP)/2}$$

YTC = yield to call date

Dt = dividend to be paid in call period

MP = current market price

CP = call price,

Suppose a company issues 8% (Rs. 100 par) preference shares, will be called in 4 years at Rs. 110. Tlie current market price is Rs. 80. The yield to call date will be :

Dt = $.08 \times 4 \times 100$ = Rs. 32

Cp = Rs. 110

MP = Rs. 80

n = 4 years

$$YTC = \frac{32 + \frac{110 - 80}{4}}{(80 + 110)/2} = \frac{39.5}{95} = .415$$

$$= 41.5\ \%$$

3.5 VALUATION OF EQUITY SHARES

Equity shares or common stock is not so easy to value. The cash flows are not stable and not easily identiable. Tlie future stream of earnings poses two problems. First, it is neither specified nor perfectly known in advance. Second, dividends and earnings are two alternatives to be chosen from, Thus, there are two approaches used to value equity shares based on dividerid and earnings.

1) Dividend Capitalisation Approach

2) Earnings Capitalisation Approach

3.5.1 Dividend Capitalisation Approach

A problem in using tlie dividend valuation model is the timing of cash flows, we shall examine it in two situations.

1) Single period valuation

2) Multiple period valuation

This will be further examined assuming

a) Dividends do not grow in future i.e., zero growth. They are constant

b) Dividends grow at a constant rate in future

c) Dividends grow at a varying rate in future

Single Period Valuation

In a single period of one year the price of equity will be calculated as given below :

$$P_o = \frac{D_1}{(1 + r)} + \frac{P_1}{(1 + r)}$$

where :

P_o = current price of equity shares

D_1 = dividend expected at year end

P_1 = price of the equity share expected at year end

r = rate of return required

lllustration 5 : A company's equity shares is expected to give a dividend of Rs. 2 per share and the price after one year is expected to be Rs. 18. The required rate of return is expected 12%. The current price will be :

$$P_o = \frac{2}{(1.12)} + \frac{18}{(1.12)} = \text{Rs. } 17.86$$

If the dividend is expected to grow then

$$P_o = \frac{D_1}{r - g}$$

Where g is the growth rate, If in the above example the dividend is expected to grow @ 5% per year, the price will be :

$$Po = \frac{2}{(0.12 - .05)} = \text{Rs. } 28.57$$

If g is given and expected rate of return is to be found out, the formula will be :

$$r = \frac{D_1}{P_o} + g$$

$$. r = \frac{2}{28.57} + 0.05$$

$$= 12\%$$

Multiple Period **Valuation**

Equity shares have no maturity period. They are expected to bring a continuous dividend stream for infinite period. Therefore, the value of an equity can be put in a formula as follows :

$$P_o = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \ldots\ldots\ldots + \frac{D_\infty}{(1+r)^t}$$

$$P_o = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t}$$

This formula helps to handle the situations of any dividend constant, rising or fluctuating. Let us take these situations one by one.

1) The Zero Growth Rate

In the above equation $D_1 = D_1 + D_2 + \ldots\ldots\ldots\ldots + D^{\infty}$

Under zero growth assumption, the numerator Dt is replaced by D. So it will be :

$$P_0 = \sum_{t=1}^{n} \frac{D}{(1 + r)^t}$$

Taking D out of summation, we get

$$P_0 = D \left[\sum_{t=1}^{n} \frac{1}{(1 + r)^t} \right]$$

or

$$P_0 = D \left[\frac{1}{r} \right] = \frac{D}{r}$$

So the formula for zro growth (constant dividends) becomes:-

$$P_0 = \frac{D}{r}$$

Illustration 6 : A company expects to pay cash dividend of Rs. 9 per share for an indefinite period. The required rate of return is 10% and current market price is Rs. 80. What will be its price/value?

$$P_0 = \frac{9}{.10} = \text{Rs. } 90$$

The intrinsic value of the share is Rs. 90 and the market price is Rs. 80, one would like to buy it

2) Constant Growth Rate

If dividend grows in future at a constant rate, it will be calculated as given below :

$$Dt = D_0 (1 + g)^t$$

where

D_t = dividend for the year t

D_0 = dividend for the year o

g = constant compound growth rate

Illustration 7 : If the current dividend for an equity shares is Rs.5 and dividend growth rate is 3%, what will be the dividend 5 years hence?

$$D_5 = 5 (1 + .03)^5$$

$$D_5 = 5 (1.03)^5 = \text{Rs. } 5.796$$

If the dividend increases at a constant compound rate. The equation becomes:-

$$P_o = \frac{D_1}{(1+r)} + \frac{D_1(1+g)}{(1+r)^2} + \frac{D_1(1+g)^2}{(1+r)^3} \quad \ldots\ldots\ldots\ldots$$

$$P_o = \frac{D_1}{r-g}$$

If the required rate of return is 15% then price will be :

$P_o = \frac{\quad}{.15-.03}$ = Rs. 41.66. At the end of five years

it will be= $\frac{5.79}{1\,5-.03}$ = Rs. 48.25

3) The **Multiple** (variable) Growth Rate

Some stocks may experience a non constant, super normal or erratic growth. In such a case, the time period is divided into two or more periods according to growth. The investor has to forecast the time up to which the dividend will be variable and after which growth rate would show a pattern and would be constant. This would mean that the present value calculation will have to be spread over two periods i.e. one period would last until time "t¹" (call it super growth profit) and second period t^2 [call it normal growth period] that would begin after time "t¹". The price of such equity share will be:

$$P_o = \frac{D_1}{(1+r)} + \frac{D_1(1+gt_1)}{(1+r)^2} + \frac{D_1(1+gt_1)^{n-1}}{(1+r)^n}$$

$$+ \frac{D_2(1+gt_2)}{(1+r)^{n+1}} + \frac{D_2(1+gt_2)}{(1+r)^{n+2}}$$

P_o = Price of equity share

D_1 = Dividend expected during period t^1

gt_1 = Super growth ratc ofdividend in period t^1

gt_2 = Normal growth ratc of dividend after period t^1

n = Period of super growth.

To calculate P_o following three steps are taken.

Step I Find the value of dividend at the end of each year during period over which the growth rate is changing. After that find out the percent values of these dividends for different years by discounting at the required rate of return "r". For this purpose the dividend is to be multiplied by respective discounting factor to find out the percent values. Add up all these present values.

Step 2 Find out the value of the equity at the end of the last year of the varying growth period. Say if it is 5 years period (4 years t_1 and 5 years t_2), then it will be $P_5 = \frac{D_5}{(r-gt^2)}$. The value P_5 represent the PV of all expected dividends from year 5 onwards at a constant growth rate in dividends.

Step 3 Find out the PV of the price figure arrived at by discounting it to period zero.

The total of the figures in step 1 and step 3 is the price value of the share.

Illustration 8 : A company pays dividend Rs. 2. It is expected to grow @ 20% for a period of 4 years: The normal growth rate after that period is expected 5%. The required rate of return is 12%. Find out the price at present.

Step 1 : $t_1 = 0 - 4$ years $t_2 = 5$ year onwards

The present value of dividends of 4 years, t_1 will be:-

$$Pt_1 = \frac{2\,(1.20)}{(1.12)} + \frac{2\,(1.20)^2}{(1.12)} + \frac{2\,(1.20)^3}{(1.12)} + \frac{2\,(1.20)^4}{(1.12)}$$

$$= \frac{2.40}{(1.12)} + \frac{2.88}{(1.12)} + \frac{3.46}{(1.12)} + \frac{4.15}{(1.12)}$$

$$= 2.14 + 2.30 + 2.46 + 2.64 = \text{Rs. } 9.54$$

Step 2

Calculate the price at the end of 4 years:

$$P_5 = \frac{D_5}{(r + gt_2)} = \frac{D_4\,(1 + gt_2)}{(r - gt_2)}$$

$$= \frac{2\,(1.20)^4\ (1.05)}{0.12 - 0.05}$$

$$= \frac{2\,(2.07)\ (1.05)}{.07} = \text{Rs. } 62.21$$

Step 3

Calculate discounted value of above price

$$- \frac{62.21}{(1.12)^4} = \text{Rs. } 39.53$$

Total the prices of two periods.

Rs. 9.54 + Rs. 39.53 = Rs. 49.07

Note : The growth rate, g, if not given, can be found by following formula :

$$\frac{\text{dividend in next period} - \text{dividend at present}}{\text{dividend at present}}$$

3.5.2 Earnings Capitalisation Approach

Under this approach three steps are taken to estimate tlie expected price: (1) estimate future earning per share, (2) estimate growth rate, and (3) find normal price earning ratio. For one year holding period with D, as expected dividends in tlie next year, the expected return can be found as follows :

$$\text{Expected Return} = \frac{D_1 + (P_1 - P)}{P}$$

P = Actual Payout ratio; P_1 = Expected payout ratio

Estimating normal price earning ratio is the main point in this approach. The dividend is expressed as a function of earnings per share and payout ratio. See the following equation.

$D_t = P_t \; E_t$ or $P_t = D_t / E_t$

P_t = payout ratio E_t = earnings per share in time "t".

D_t = dividend in time "t"

Forecasting earning per share and payout ratio, then will mean forecasting dividends. It can be expressed as follows:

$$= \sum_{t=1}^{\infty} \frac{P_t E_t}{(1+r)^t}$$

If earnings grow at a rate 'g' in future period then

$E_t = E_t - 1 \; (1 + gt)$ P.

We have to compare the actual price earning ratio with normal price earning ratio. The normal price is calculated by the formula as given below:

$$\frac{V_i}{E_o} = p \frac{(1+gt)}{(r-gt)}$$

V_i = Intrinsic value or the price

E_o = Actual level of earnings

The above equation shows that normal price earning ratio will be higher if the expected payout ratio is greater. Moreover, the greater, the expected growth rates, tlie higher the price earning ratio. Two points be noted: (I) shares would be under priced if its normal price earning ratio (V_i / Eo) exceeds actual price earning ratio and vice versa. (2) The above equation holds good in case of constant growth situation. In case of zero-growth situation

$$\frac{V_i}{E_o} = \frac{I}{r}$$

For example if a company pays dividend on equity share of Rs. 8 and there is no growth in this amount in future. The market price is Rs. 65 and required rate of return is 10%. The normal price earning ratio is 1/10 10 . The actual price earning ratio is Rs. 6518 = 8.1 It means that tlie share at Rs. 65 is underpriced.

Now we take an example of constant growth. Suppose a company pays a dividend of Rs. 5 per share and expects it to grow at 5% p.a. for ever. The required rate of return is 10% and current market price is 80. E_o may be taken as Rs. 20. Using P/E approach, find out whether share is over or under priced.

This is a case of constant growth. Tlie normal price – earnings (V_i / E_o) can be found out by using the following equation.

$$\frac{V_i}{E_o} = \frac{D}{E_o}\left[\frac{(1+g_t)}{(r-g_t)}\right]$$

$$= \frac{5}{20}\left[\frac{(1+.05)}{(.10-.05)}\right]$$

$$= .25\ \frac{(1.05)}{(.05)} = 5.25$$

$$\frac{P}{E_o} = \frac{80}{20} = 4$$

Since $\frac{V_i}{E_o} = 5.25$ and $\frac{P}{E_o} = 4$, the share is underpriced

Other Approaches

For valuation of equity shares, there are other approaches, as well otlier than basecl on dividends or earnings. They are based on book value per shares or the liquidation value per share value earnings. These approaclies are not so popular.

Book Value'

Tlie book value per share means tlie net worth of the company i.e., paid equity share capital plus free reserves and surpluses divided by tlie number of equity sliares outstanding. For example, if tlie paid up capital of a company is Rs. 50,00,000 and reserves Rs. 30,00,000 i.e., net worth Rs. 80,00,000. If the equity shares are 20,00,000, then tlie book value per share is Rs. 80,00,000 ÷ 20,00,000 = Rs. 4. Those who favour this approach say it is an objective measure of value. But it suffers from a serious drawback. It is based on historical balance sheet figures that are arrived at according to accounting conventions and estimates of accountants are so not reliable.

Liquidation Value

Under this approach, it is assumed tliat if tlie company goes into liquidation how much amount its assets would realise on sale. The following formula is used to find tlie liquidation value per share

$$\frac{\text{Amount realised on liquadation from sale of assets} - \text{Amount to paid to all creditors and preferences shares}}{\text{Number of equity shares outstanding}}$$

This approach also has a drawback because amount realised on liquidation is just an estimate which may be over or understated.

Check Your Progress B

1) Indicate whether the following statements are True or False

   a) The intrinsic value of a bond is equal to the present value of the expected cash flows.

   b) The higher the payout ratio, higher will be normal price earning under all circumstances.

c) A bond promises interest payments every three months equal to one fourth the coupon rate times the face value of the bond and the payment of the principal at its maturity.

d) Yield to maturity means promised yield on a bond purchased at current market price and held till maturity.

e) According to the dividend capitalisaton approach the value of share is the present value of only of high dividends paid in future.

3.6 LET US SUM UP

The basic valuation process of securities is a constant exercise considering tlie factors of costs, benefits and uncertainty. The performance of a firm is linked to the performance of the industry to which it belongs, which in turn depends upon the performance of the economy and the market in general.

According to basic valuation model the value of an asset, financial or real, depends upon the cash flows it generates evaluated on a present value basis. The intrinsic value of a bond (or a fixed income security) is equal to the present value of its expected cash flows. The change in tlie required rate of return, the period of maturity and the yield to maturity effect the valuation of a bond.

The dividend on preference shares are fixed like a perpetuity. To value a perpetuity, single annual return are taken divided by an appropriate rate. Equity shares are not so easy to value because tlie cash flows are not stable and cannot be identified. There are two approaches to value them (1) dividend capitalisation approach and (2) earnings capitalisation appraoch. The valuation method differ for a single period and for a multi period. In case of multi period dividends may grow constantly or at a variable rate or at zero growth rate.

In case of earnings model, the price, returns and price earning ratio play an important role. The price earning ratio is effected by increase or decrease in growth rate. The dividend yield increase by decrease in growth rate, whereas capital gains yield decreases by decrease in growtli rate and vice versa. The normal price earning ratio is compared with actual price earning ratio. The other approaches based on book value per share or liquidation value are also not adequate as they are based on estimates.

3.7 KEY WORDS

Current Yield : The yield on a security resulting from dividing interest payments or dividends by the current market price.

Coupon Rate : The stated rate of interest on a bond.

Constant Growth Model : A type ofvaluation model used to solve the current price of a share and assumes that the dividends are expected to grow at a constant rate overtime.

Dividend Capitalisation Approach : Model used to value equity shares. According to it, the current price of a share is equal to the discounted value of all future dividends.

Face Value : The stated value of an asset.

Investment Strategy : Investment management which involves buying or selling financial assets with the object of earning positive risk adjusted returns.

Intrintic Value : The present value of the stream of benefits expected from an asset.

Multiple Growth Approach : Under this model of dividends are assumed to grow at different rates over specially defined time periods.

Price-Earning Ratio : The ratio between price of a share and earnings.

Security Analysis : The process that involves determining the respective future benefits of a security, the conditions under which such benefits will be received and the likelihood of such conditions occurring.

Yield to Maturity : The discount rate that equaties the present value of interest payment and redemption value with the present price of a bond.

3.8 ANSWERS TO CHECK YOUR PROGRESS

A 3) 9%

B 1 (a and d) True (b, c and e) False

3.9 TERMINAL QUESTIONS/EXERCISES

1) Explain the various approches used to value equity shares?

2) Explain and illustrate YTM method.

3) The market price of a Rs. 1000 par value bond, coupon rate of 9% and maturity after 8 years is Rs. 800. What rate of return would be investor earn if he buys this bond and holds it to maturity. Use interpolation method.

4) A company paid a dividend of Rs. 0.75 per share last year. It is expected to pay Rs. 2 per share next year. Investors forecast a dividend of Rs, 3 per share in the year after that. The required rate of return is 15%. The forecast is that the dividend will grow @ 10% per year into an adequate future. The current price is Rs. 54. Would you buy ?

5) Discuss the limitations of liquidation value and book value approaches.