QUESTION NO.13A*(6 Marks)(Exam Question)* Following Financial data are available for PQR Ltd. for the years ending 2008 (₹ In lakh)

8% Debentures	125	10% Bonds (2007)	50
Equity shares (₹ 10 each)	100	Reserve and Surplus	300
Total Assets	600	Assets Turnover ratio	1.1
Effective Interest rate	8%	Tax rate	40%

[**Hint**: Both For Debenture & Bond]

Current market Price of Shares	14	Required Rate of return of investors (Ke)	15%
Operating Profit Margin	10%	Dividend payout ratio for the years ending 2008	16.67%

You are required to: (i) Draw income statement for the year ending 2008 **(ii)** Calculate its growth rate **(iii)** Calculate the fair price of the company's shares using dividend discount model, and **(iv)** What is your opinion on investment in the company's share at current price?

Solution:

(i)Workings:

Asset Turnover Ratio	= 1.1
Total Assets	= ₹ 600
Turnover ₹ 600 lakhs x 11	= ₹ 660 lakhs
Effective interest rate	= 8%
Liabilities = ₹ 125 lakhs + 50 lakhs	= 175 lakh
Interest	= ₹ 175 lakhs x 0.08 = ₹ 14 lakh
Operating Margin	= 10%
Hence operating cost	= (1 - 0.10) ₹660 lakhs = ₹594 lakh
Dividend Payout	= 16.67%
Tax rate	= 40%

(i)Income statement (₹ In Lakhs)

Sale	660
Operating Exp	594
EBIT	66
Interest	14
EBT	52
Tax @ 40%	20.80
EAT	31.20
Dividend @ 16.67%	5.20
Retained Earnings	26.00

(ii)Growth Rate = g = b x r ; ROE (r) = $\dfrac{\text{Earning For Equity}}{\text{Equity Shareholder's Fund}}$ = $\dfrac{31.2\,\text{Lakhs}}{400\,\text{Lakhs}}$ x 100 = 7.8 %

b = Retention Ratio = 1 - Dividend Payout Ratio = 1 - .1667 = .8333; g = 0.078 x .8333 = 6.5%

Note: We should always prefer g = b x r equation for growth rate calculation.

(iii)Calculation of fair price of share using dividend discount model: Po = $\dfrac{DPS_0(1+g)}{Ke - g}$ = $\dfrac{.52(1+.065)}{.15-.065}$ = ₹6.51

Working Note: DPS = $\dfrac{5.2\,\text{Lakhs}}{10\,\text{Lakhs}}$

Additional Analysis: When Past Year Data is given in question,and dividend is calculated using past year data then calculated Dividend will be Do.

(iv)Comment: Since the current market price of share is ₹14, the share is overvalued. Hence the investor should not invest in the company.

QUESTION NO.19 *(Exam Question)* Mr. A is thinking of buying shares at ₹ 500 each having face value of ₹ 100. He is expecting a bonus at the ratio of 1:5 during the fourth year. Annual expected dividend is 20% and the same rate is expected to be maintained on the expanded capital base. He intends to sell the shares at the end of seventh year at an expected price of ₹ 900 each. Incidental expenses(Brokerage) for purchase and sale of shares are estimated to be 5% of the market price. He expects a minimum return of 12% per annum.

(a) Should Mr. A buy the share? **(b)**If so, what maximum price should he pay for each share?

Solution:

(a)Present Value of dividend stream and sales proceeds

Years	Divdend /Sale	PVF (12%)	PV (₹)
1	₹ 20	0.893	17.86
2	₹ 20	0.797	15.94
3	₹ 20	0.712	14.24
4	₹ 24	0.636	15.26
5	₹ 24	0.567	13.61
6	₹ 24	0.507	12.17
7	₹ 24	0.452	10.85
7	₹ 1026 (₹ 900 x 1.2 x 0.95*)	0.452	463.75
			₹ 563.68
Less : -	Cost of Share (₹ 500 x 1.05**)		₹ 525.00
	Net gain		₹ 38.68

Since Mr. A is gaining ₹ 38.68 per share, he should buy the share.

*deducting 5% issue expenses; **including 5% issue expenses

(b)Maximum price Mr. A should be ready to pay is ₹ 563.68 which will include incidental expenses.

563.68 x 100/105 = ₹ 536.84 excluding incidental expenses

QUESTION NO.31 The following information pertains to Golden Ltd:

Profit before tax	₹ 75 crore	Tax rate	30%
Equity capitalization rate	15%	Return on investment (ROI)	18%
Retention ratio	80%	Number of shares outstanding	75,00,000

The market price of the share of the company in the bull market was somewhere around ₹ 2100 per share. Advice, whether the share of the Golden Ltd. should be purchased or not. Further, also suggest the form of Market prevalent as per EMH Theory. **Note:** Use Gordon's Growth Model.

Solution:

Gordon's Formula: $P_0 = \dfrac{E(1-b)}{K-br}$ Where, P_0 = Market price per share; E = Earnings per share (₹ 52.50 crore / 75,00,000) = ₹ 70; K = Cost of Capital = 15%; b = 80%; D = ₹ 70 x 0.20 = ₹14; r = IRR = 18%; br = Growth Rate (0.80 x 18%) = 14.4%; $P_0 = \dfrac{70(1-0.80)}{0.15-0.144} = \dfrac{14}{0.006} = ₹ 2333.33$

Advice: Despite the fact that market price of share of the company during bull was around ₹ 2100, **it is worth to purchase** the same as intrinsic value of share is higher than market price even in bull phase. The form of market

is weak form of market as it is not discounting all information.

Note: EPS is normally assumed as EPS 1 in this type of question

EPQ (EXTRA PRACTICAL QUESTION)

QUESTION NO.1: The current EPS of M/s VEE Ltd. is ₹ 4. The company has shown an extraordinary growth of 40% in its earnings in the last few year.This high growth rate is likely to continue for the next 5 years after which growth rate in earnings will decline from 40% to 10% during the next 5 years and remain stable at 10% thereafter. The decline in the growth rate during the five year transition period will be equal and linear. Currently, the company's pay-out ratio is 10%. It is likely to remain the same for the next five years and from the beginning of the sixth year till the end of the 10th year, the pay-out will linearly increase and stabilize at 50% at the end of the 10th year. The post tax cost of capital is 17% and the **PV factors are given below:**

Years	1	2	3	4	5	6	7	8	9	10
PVIF@17%	0.855	0.731	0.625	0.534	0.456	0.390	0.333	0.285	0.244	0.209

You are required to calculate the intrinsic value of the company's stock based on expected dividend. If the current market price of the stock is ₹125, suggest if it is advisable for the investor to invest in the company's stock or not.

Solution:

Working Notes: (i)Computation of Growth Rate in Earning and EPS

Year	1	2	3	4	5	6	7	8	9	10
Growth in Earning	40%	40%	40%	40%	40%	34%*	28%	22%	16%	10%
EPS (₹)	5.60	7.84	10.98	15.37	21.51	28.82	36.89	45.00	52.20	57.42

(ii)Computation of Payout Ratio and Dividend

Year	1	2	3	4	5	6	7	8	9	10
PayoutRatio	10%	10%	10%	10%	10%	18%	26%	34%	42%	50%
Dividend (₹)	0.56	0.78	1.10	1.54	2.15	5.19	9.59	15.30	21.92	28.71

(iii)Calculation of PV of Dividend

Year	Dividend (₹)	PVF	PV of Dividend (₹)
1	0.56	0.855	0.48
2	0.78	0.731	0.57
3	1.10	0.625	0.69
4	1.54	0.534	0.82
5	2.15	0.456	0.98
6	5.19	0.390	2.02
7	9.59	0.333	3.19
8	15.30	0.285	4.36
9	21.92	0.244	5.35
10	28.71	0.209	6.00
			24.46

$$TV = \frac{28.71(1.1)}{0.17-0.10} \times 0.209 = ₹\ 94.29; \text{ Intrinsic Value} = ₹\ 24.46 + ₹\ 94.29 = ₹\ 118.75$$

Since the Intrinsic Value of Equity share is less than current market price, it is not advisable to invest in the same.

QUESTION NO.2 NM Ltd. (NML) is aspiring to enter the capital market in a three years' time. The Board wants to attain the target price of ₹ 70 for its shares at the end of three years. The present value of its shares is ₹ 52.03. The dividend is expected to grow at a rate of 15% for the next three years. NML uses dividend growth model for

its projections. The required rate of return is 15%.

You are required to calculate the amount of dividend to be declared by the board in the base year so as to achieve the target price.

Period (t)	1	2	3
PVIF (15%, t)	0.8696	0.7561	0.6575

Solution:

Present value of Share = PV of Stream of Dividend upto 3 years + PV of Target price of share after 3 years

₹ 52.03 = PV of Stream of Dividend upto 3 years + 70.00 x 0.6575

PV of Stream of Dividend upto 3 years = ₹ 52.03 – ₹ 46.03 = ₹ 6

Let Base Dividend is D_0, then

₹ 6 = $D_0 (1 + g)$ x PVIF (15%,1) + $D_0 (1 + g)^2$ PVIF(15%, 2) + $D_0 (1 + g)^3$ PVIF (15%, 3)

₹ 6 = $D_0 (1.15)$ x 0.8696 + $D_0 (1.15)^2$ x 0.7561 + $D_0 (1.15)^3$ x 0.6575

₹ 6 = $D_0 + D_0 + D_0 = 3D_0$; D_0 = ₹ 2

Thus, Company should declare a dividend of ₹ 2 in base year.

"An Unfailing Success Plan: At each day's end write down the six most important things to do tomorrow; number them in order of importance, and then do them."