CHAPTER 38

EQUITY VALUATION CONCEPTS AND BASIC TOOLS

1. (C) **company in a mature-stage industry.**

    Explanation

    Companies in the mature stage of the industry life cycle are the most likely to fit the assumptions of the constant growth dividend discount model.

    The constant growth DDM has the following assumptions:

    *   The stock pays dividends that grow at a constant rate.
    *   The constant growth rate, g, continues for an infinite period.
    *   The required return on equity, k, must be greater than g.

    The constant growth DDM is unlikely to be appropriate for valuing growth companies. A multistage dividend discount model that accounts for a supernormal growth period is likely to be more appropriate.

    (Study Session 12, Module 38.2, LOS 38.h)

    Related Material

    SchweserNotes - Book 3

2. (B) **present value model.**

    Explanation

    The free cash flow to equity model is one type of present value model or discounted cash flow model. It estimates a stock's value as the present value of cash available to common shareholders. The enterprise value model is an example of a multiplier model.

    (Study Session 12, Module 38.1, LOS 38.b)

    Related Material

    SchweserNotes - Book 3

3. (B) **$30.29.**

    Explanation

    The dividend just paid is Do. To use the constant growth dividend discount model, we need the next period's dividend, D_1:

    D_1 = $2.00 x 0.06 = $2.12

    P_0 = D1 / (k - g) = 2.12 / (0.13 - 0.06) = $30.29

    (Study Session 12, Module 38.2, LOS 38.g)

    Related Material

    SchweserNotes - Book 3

4. (B) $12.16.

Explanation

First solve for D_5: $D_5 = (D_1)(1 + g)^n = \$1(1.05)^4 = \$1.216$

$$P_0 = \frac{1}{0.15 \cdot 0.05} = \$12.16$$

$$P_0 = \frac{1}{0.15 \cdot 0.05} = 10$$

$P_4 = 10(1.05)^4 = \$12.16$

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

5. (C) multiplier model.

Explanation

An enterprise value model is an example of a multiplier model. Enterprise value is analyzed as a multiple of revenue or earnings and compared among firms in a peer group.

(Study Session 12, Module 38.1, LOS 38.b)

Related Material

SchweserNotes - Book 3

6. (B) 11.76%.

Explanation

From the formula: $\text{Value}_{\text{preferred Stock}} = D / k_p$, we derive $k_p = D / \text{Value}_{\text{preferred Stock}} = 11.50 / 88.46 = 0.1300$, or 13.00%.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

7. (B) $36.

Explanation

Find the present values of the cash flows and add them together.

N = 1; IN = 12; FV = 1.50; CPT —> PV = 1.34

N = 2; IN = 12; FV = 1.75; CPT —> PV = 1.40

N = 3; IN = 12; FV = 2.05 + 43.87 = 45.92; CPT —> PV = 32.68

stock price = $1.34 + $1.40 + $32.68 = $35.42

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Presentation Not Found

Related Material

SchweserNotes - Book 3

8. (C) 4.5%.

Explanation

Retention ratio equals 1 - 0.40, or 0.60.

Return on equity equals (10.0%)(2.0)(1.5) = 30.0%.

Dividend growth rate equals (0.60)(30.0%) = 18.0%.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

9. (A) free cash flow to equity model.

Explanation

Free cash flow to equity represents a firm's capacity to pay future dividends. A free cash flow to equity model estimates the firm's FCFE for future periods and values the stock as the present value of the firm's future FCFE per share.

(Study Session 12, Module 38.2, LOS 38.e)

Related Material

SchweserNotes - Book 3

10. (A) 1 / k

Explanation

P/E = div payout ratio / (k - g)

where g = (retention rate)(ROE) = (0)(ROE) = 0

Dividend payout = 1 - retention ratio = 1 - 0 = 1

P/E = 1 / (k - 0) = 1 /k

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

11. (A) $26.50   Gordon growth

Explanation

$2(1.06)/0.14 - 0.06 = $26.50.

This calculation is an example of the Gordon Growth Model also known as the constant growth model.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

12. (A) ex-dividend date.

Explanation

The ex-dividend date is the cutoff date for receiving the dividend and occurs one or two business days before the holder-of-record date. An investor who buys a share on or after the ex-dividend date will not receive the dividend.

(Study Session 12, Module 38.1, LOS 38.d)

Related Material

SchweserNotes - Book 3

13. **(A)** A firm with a $1.50 dividend last year, a dividend payout ratio of 40%, a return on equity of 12%, and a 15% required return is worth $18.24.

Explanation

A firm with a $1.50 dividend last year, a dividend payout ratio of 40%, a return on new investment of 12%, and a 15% required return is worth $20.64. The growth rate is $(1 - 0.40) \times 0.12 = 7.2\%$. The expected dividend is then $(\$1.50)(1.072) = \$1.61$. The value is then $(1.61) / (0.15 - 0.072) = \$20.64$.

(Study Session 12, Module 38.2, LOS 38.h)

Related Material

SchweserNotes - Book 3

14. **(A)** $57.70.

Explanation

The current stock price is equal to $(D_1 + P_1) / (1 + k_e)$. D_1 equals $\$6.10(1.04) = \$6.34$. The equity discount rate is $3\% + 12\% = 15\%$. Therefore the current stock price is $(\$6.34 + \$60)/(1.15) = \$57.70$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

15. **(B)** 10.00.

Explanation

$P/E = D/E1 / (k - g)$

$D/E1$ = Dividend payout ratio = 0.3

$g = 0.11$

$k = 6 + (1.5)(14 - 6) = 18\%$

$P/E = 0.3 / (0.18 - 0.11) = 0.3 / 0.07 = 4.29$

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

16. **(B)** $37.50.

Explanation

Expected dividend = $\$4.50 \times 0.50 = \$2.25$

Value today = $\$2.25 / (0.12 - 0.06) = \$37.50$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

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17. (C) 9.0 times.

Explanation

The constant growth dividend discount model can be stated in terms of a company's price-earnings ratio:

$P_0/E_1 = (D_1/E_1) / (k - g)$

where P_0/E_1 is the justified P/E ratio and D_1/E_1 is the expected dividend payout ratio.

Here, $D_1/E_1 = 0.45$, the required rate of return $k = 0.15$, and the constant growth rate of dividends $g = 0.10$.

$P_0/E_1 = 0.45 / (0.15 - 0.10)$

$= 0.45 / 0.05 = 9.0$

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

18. (B) a high ROE.

Explanation

The growth rate of dividends can be estimated as retention rate x ROE, or (1 - payout ratio) x ROE. Thus high ROE is consistent with a high growth rate. A high dividend payout ratio (which is the same as a low retention rate) is more likely to be consistent with a low growth rate of dividends.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

19. (C) increase.

Explanation

Increase in g: As g increases, the spread between k_e and g, or the P/E denominator, will decrease, and the P/E ratio will increase.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

20. (B) $104.

Explanation

Infinite period DDM: $P_0 = D_1 / (k_e - g)$

D_1 = (Earnings x Payout ratio) / average number of shares outstanding

= ($200,000 x 0.625) / 50,000 = $2.50.

k_e = risk free rate + [beta x (expected market return - risk free rate)]

k_e = 7.5% + [1.8 x (13.0% - 7.5%)] = 17.4%.

g = (retention rate x ROE)

Retention = (1 - Payout) = 1 - 0.625 = 0.375.

ROE = net income/equity

= 200,000/500,000 = 0.4

g = 0.375 x 0.4 = 0.15.

$P_0 = D_1 / (k_e - g) = \$2.50 / (0.174 - 0.15) = 104.17.$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

21. (C) **earnings are negative.**

Explanation

When earnings are negative, P/E ratios cannot be used but P/B ratios can be used. The firm's rate of growth and the volatility of markets do not suggest advantages of using P/B ratios rather than P/E ratios.

(Study Session 12, Module 38.3, LOS 38.m)

Related Material

SchweserNotes - Book 3

22. (C) **receive the dividend.**

Explanation

The holder-of-record date is the date on which the shareholders of record are designated to receive the dividend. Shares sold on or after the ex-dividend date are sold without claim to the dividend, even if they are sold prior to the date of record. The dividend would be paid to the holder as of the close of trading on the day prior to the ex-dividend date.

(Study Session 12, Module 38.1, LOS 38.d)

Related Material

SchweserNotes - Book 3

23. (C) **The price/earnings ratio is 33.3.**

Explanation

The price/sales ratio is $250/$750 = 0.33. Price/book = $250/$225 = 1.11. Price/earnings = $250/$75 = 3.33.

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

24. (B) 50% lower.

Explanation

The numerator of the formula for the P/E is the payout ratio, which is unchanged (both expected earnings and dividends increase by the same percentage). The denominator (k - g) doubles from 3% to 6%, which will decrease the P/E by half.

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

25. (B) expected dividend payout ratio divided by the difference between the required return on equity and the expected dividend growth rate.

Explanation

Starting with the dividend discount model $P_0 = D_1/(k_e - g)$, and dividing both sides by E_1 yields: $P_0/E_1 = (D_1/E_1)/(k_e - g)$

Thus, the P/E ratio is determined by:

- The expected dividend payout ratio (D_1/E_1).
- The required rate of return on the stock (k_e).
- The expected growth rate of dividends (g).

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

26. (B) $70.97.

Explanation

$k_{preferred}$ = base yield + risk premium = 0.07 + 0.0075 = 0.0775

$Value_{preferred}$ = Dividend / $k_{preferred}$

Value = 5.50 / 0.0775 = $70.97

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

27. (C) $41.32.

Explanation

G = ROE x retention ratio = ROE x b = 15 x 0.4 = 6%

Based on the growth rate we can calculate the expected price in year 3:

$P_3 = D_4 / (k - g) = 2.2 / (0.10 - 0.06) = \$55$

The stock value today is:

P_0 = PV (55) at 10% for 3 periods = $41.32

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

28. **(B)** **is best applied to young, rapidly growing firms.**

Explanation

The model is most appropriately used when the firm is mature, with a moderate growth rate, paying a constant stream of dividends. In order for the model to produce a finite result, the company's growth rate must not exceed the required rate of return.

(Study Session 12, Module 38.2, LOS 38.h)

Related Material

SchweserNotes - Book 3

29. **(C)** **12.0%.**

Explanation

Required return = $R_f + \beta(R_M - R_f)$ = 0.03 + 1.5(0.06) = 0.12

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

30. **(A)** **$25.23 $29.79**

Explanation

First, we need to calculate the required rate of return. When a stock's beta equals 1, the required return is equal to the market return, or 10.0%. Thus, k_e = 0.10. Alternative: Using the capital asset pricing model (CAPM), $k_e = R_f + Beta* (R_m - R_f)$ = 4.5% + 1 * (10.0% - 4.5%) = 4.5% + 5.5% = 10.0%.

Next, we need to calculate the dividends for years 1 and 2.

- $D_1 = D_0 \times (1 + g)$ = 2.50 x (1.10) = 2.75
- $D_2 = D_1 \times (1 + g)$ = 2.75 x (1.10) = 3.03

Then, we use the one-year holding period DDM to calculate the present value of the expected stock cash flows (assuming the one-year hold).

- $P_0 = [D_1 / (1 + k_e)] + [P_1 / (1 + k_e)]$ = [$2.75 / (1.10)] + [$25.0 / (1.10)] = **$25.23**.

  Shortcut: since the growth rate in dividends, g, was equal to ke, the present value of next year's dividend is equal to last year's dividend.

  Finally, we use the multi-period DDM to calculate the return for the stock if held for two years.

- $P_0 = [D_1 / (1 + k_e)] + [D_2 / 1 + k_e)^2] + [P_2 / (1 + k_e)^2]$ = [$2.75 / (1.10)] + [$3.03 / (1.10)^2] + [$30.0 / (1.10)^2] = **$29.79**.

  Note: since the growth rate in dividends, g, was equal to k_e, the present value of next year's dividend is equal to last year's dividend (for periods 1 and 2). Thus, a quick calculation would be 2.5 x 2 + $30.00 / (1.10)^2 = 29.79.

  (Study Session 12, Module 38.2, LOS 38.g)

  Related Material

  SchweserNotes - Book 3

31. (A) A rise in the stock risk premium.

    Explanation

    P/E = (1 - RR)/(k - g)

    To lower P/E: RR increases, g decreases and or k increases. Both a decline in the RF rate and a decline in the rate of inflation will reduce k. An increase in the stock's risk premium will increase k.

    (Study Session 12, Module 38.3, LOS 38.j)

    Related Material

    SchweserNotes - Book 3

32. (B) Yes, because the purchase occurs before the payment date.

    Explanation

    The stock will trade ex-dividend one or two business days before the holder-of-record date. For Further Reference:

    (Study Session 12, Module 38.1, LOS 38.d)

    CFA® Program Curriculum, Volume 4, page 366

    Related Material

    SchweserNotes - Book 3

33. (B) $23.20.

    Explanation

    Cost of equity capital = 5% + 1.5(5%) = 12.5%

    $P_0 = (1.1 / 1.125) + (25 / 1.125) = \$23.20$.

    (Study Session 12, Module 38.2, LOS 38.g)

    Related Material

    SchweserNotes - Book 3

34. (C) 9.0%.

    Explanation

    $k = [(D_1 / P) + g] = [(2/50) + 0.05] = 0.09$, or 9.00%.

    (Study Session 12, Module 38.2, LOS 38.g)

    Related Material

    SchweserNotes - Book 3

35. (A) decrease.

    Explanation

    The P/E ratio may be defined as: Payout ratio / (k - g) , so if k is constant and g goes to zero, the P/E will decrease.

    (Study Session 12, Module 38.3, LOS 38.j)

    Related Material

    SchweserNotes - Book 3

36. (A) **$28.57.**

Explanation

$P_0 = D_1 / k - g$

$D_1 = \$2$

$g = 0.05$

$k = 0.12$

$P_0 = 2 / 0.12 - 0.05 = 2 / 0.07 = \$28.57$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

37. (C) **historical dividend payout ratio.**

Explanation

$P/E = (D_1/E_1)/(k - g)$

where:

D_1/E_1 = the expected dividend payout ratio

k = estimated required rate of return on the stock

g = expected growth rate of dividends for the stock

The P/E is most sensitive to movements in the denominator.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

38. (B) **The required rate of return increases, and the dividend payout ratio decreases.**

Explanation

Increases in k reduce P/E. Increases in g or the dividend payout ratio increase P/E.

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 375

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

39. (C) **16.20%.**

Explanation

$g = (RR)(ROE)$

$= (.60)(.27)$

$= 0.162$ or 16.2%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

40. (C) is likely to be liquidated.

Explanation

For companies that are likely to be liquidated, the asset-based approach may be the most appropriate value as the assets may be worth more to another entity. Asset-based valuation models do not work well for companies that have large amounts of intangible assets. Because asset-based valuation is not forward-looking, an asset-based approach may underestimate the value of companies that are expected to be profitable.

(Study Session 12, Module 38.3, LOS 38.1)

Related Material

SchweserNotes - Book 34

41. (B) 0.50X.

Explanation

Market value of equity = ($100)(1000) = $100,000

Price / Sales = $100,000 / $200,000 = 0.5X

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

42. (A) 25%.

Explanation

The forecast year-end price, P, is:

$$\text{Expected return} = \frac{dividend + (endingproce - beginningprice)}{beginningprice}$$

$$= \frac{\$5 + \$120 - 100}{\$100} = 0.25 \text{ or } 25\%$$

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 375

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

43. (B) operating income.

Explanation

An enterprise value multiple is typically calculated as the ratio of enterprise value to EBITDA or some other measure of operating income. Net income or pretax income are not typically used because they reflect a firm's current capital structure and non-cash charges, and because the ratio becomes meaningless when income is negative.

(Study Session 12, Module 38.3, LOS 38.k)

Related Material

SchweserNotes - Book 3

44. (C) $11.77.

Explanation

The expected growth rate of dividends is the retention rate (RR) times the return on the equity portion of new investments (ROE), g = (RR)(ROE). The retention rate is 1 minus the payout rate.

RR = 1 - 0.80 = 0.20.

g = (0.20)(0.15) = 3.0%.

The value of the stock will be the dividend paid next year divided by the required rate of return minus the growth rate. Next year's dividend is $0.80 x 1.03 = $0.824. So the value is 0.824 / (0.10 - 0.03) = 0.824 / 0.07 = $11.77.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

45. (B) $26.86.

Explanation

Here, we are given all the inputs we need. Use the following steps to calculate the value of the stock:

First, expand the infinite period DDM:

DDM formula: $P_0 = D_1 / (k_e - g)$

D_1 = (Earnings x Payout ratio) / average number of shares outstanding

= ($150,000 x 0.60) / 75,000 = $1.20

k_e = nominal risk free rate + [beta x (expected market return - nominal risk free rate)]

Note: Nominal risk- free rate = (1 + real risk free rate) x (1 + expected inflation) - 1

= (1.04) x (1.03) - 1 = 0.0712, or 7.12%.

k_e = 7.12% + [2.1 x (13.0% - 7.12%)] = 0.19468

g = (retention rate x ROE)

Retention   = (1 - Payout) = 1 - 0.60 = 0.40.

= (net income / sales)(sales / total assets)(total assets / equity)

= (150,000 / 1,000,000)(1,000,000 / 800,000) (800,000 / 400,000)

= 0.375

g = 0.375 x 0.40 = 0.15

Then, calculate: $P_0 = D_1 / (k_e - g)$ = $1.20 / (0.19468 - 0.15) = **26.86.**

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

46. (C) **The required return on equity.**

Explanation

The capital asset pricing model is a rate of return model that can be used to estimate a stock's required rate of return, given the nominal risk-free rate, the market risk premium, and the stock's beta:

$k = R_{\text{nominal risk free rate}} + (\text{beta})(R_{\text{market}} - R_{\text{nominal risk free rate}})$.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

47. (A) **$62.50.**

Explanation

The preferred dividend is 0.075($50) = $3.75.

The value of the preferred = $3.75 / 0.06 = $62.50.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

48. (C) **$82.14.**

Explanation

Value of preferred = D / kp = $11.50 / 0.14 = $82.14

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

49. (A) **Asset-based.**

Explanation

An asset-based model would likely be most appropriate to estimate a floor value for a firm entering liquidation. Future cash flows and firm fundamentals such as earnings or sales are not relevant for a firm that is not a going concern.

(Study Session 12, Module 38.3, LOS 38.m)

Related Material

SchweserNotes - Book 3

50. (B) **P/E ratio will decrease.**

Explanation

According to the earnings multiplier model, the P/E ratio is equal to $P_0/E_1 = (D_1/E_1)/(k_e - g)$. As k_e increases, P_0/E_1 will decrease, all else equal.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

51. (A) **the expected interest rate on the bonds of the firm.**
Explanation
The factors that affect the P/E ratio are the same factors that affect the value of a firm in the infinite growth dividend discount model. The expected interest rate on the bonds is not a significant factor affecting the P/E ratio.
(Study Session 12, Module 38.3, LOS 38.j)
Related Material
SchweserNotes - Book 3

52. (A) **Declaration date, ex-dividend date, holder-of-record date, payment date.**
Explanation
The dividend payment chronology begins with the declaration of a dividend by the board of directors. The ex-dividend date occurs one or two business days before the holder-of-record date.
(Study Session 12, Module 38.1, LOS 38.d)
Related Material
SchweserNotes - Book 3

53. (A) **A firm with accounting standards consistent to other firms.**
Explanation
Assuming consistent accounting standards across firms, P/B ratios can reveal signs of misvaluation across firms.
(Study Session 12, Module 38.3, LOS 38.i)
Related Material
SchweserNotes - Book 3

54. (A) **$17.67.**
Explanation
P_0 = Value of the stock = $D_1 / (k - g)$
g = (RR)(ROE)
RR = 1 - dividend payout = 1 - 0.4 = 0.6
ROE = 0.1
g = (0.6)(0.1) = 0.06
D_1 = $(D_0)(1 + g)$ = (1)(1 + 0.06) = $1.06
P_0 = 1.06 / (0.12 - 0.06) = 1.06 / 0.06 = $17.67
(Study Session 12, Module 38.2, LOS 38.g)
Related Material
SchweserNotes - Book 3

55. (B) **$17.67.**
Explanation
The discount rate is k_e = 0.05 + 0.5(0.10 - 0.05) = 0.075. Use the infinite period dividend discount model to value the stock. The stock value = $D_1 / (k_e - g)$ = (0.25 x 1.06) / (0.075 -0.06) = $17.67.
(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

56. **(A)** **expected stock price in one year.**

Explanation

According to the earnings multiplier model, the P/E ratio is equal to $P_0/E_1 = (D_1/E_1)/(ke - g)$.

Thus, the P/E ratio is determined by:

- The expected dividend payout ratio (D_1/E_1).
- The required rate of return on the stock (k_e).
- The expected growth rate of dividends (g).

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

57. **(B)** **multistage dividend discount model.**

Explanation

A multistage model is the most appropriate model because the company is growing dividends at a higher rate than can be sustained in the long run. Though the company may be able to grow dividends at a higher-than-sustainable 25% annual rate for a finite period, at some point dividend growth will have to slow to a lower, more sustainable rate. The Gordon growth model is appropriate to use for mature companies that have a history of increasing their dividend at a steady and sustainable rate. A single stage free cash flow to equity model is similar to the Gordon growth model, but values future free cash flow to equity rather than dividends.

(Study Session 12, Module 38.2, LOS 38.e)

Related Material

SchweserNotes - Book 3

58. **(A)** **(ROE) x (RR).**

Explanation

The Sustainable Growth Rate is equal to the return on the equity portion of new investments (ROE) multiplied by the firm's retention rate (RR).

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

59. **(C)** **7.8%.**

Explanation

ROE = (Net Income / Sales)(Sales / Total Assets)(Total Assets / Total Equity)

ROE = (0.1)(1.2)(1.3) = 0.156

    g = (retention ratio)(ROE) = 0.5(0.156) = 0.078 or 7.8%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

60. (B) **Book values are highly useful measures for firms in service industries.**

    Explanation

    Book values tend not to be useful valuation measures for firms in service industries because they typically have fewer tangible assets on their balance sheets than firms in other industries.

    Two of the advantages of using P/BV ratios for equity valuation are that P/BV ratios can be compared across similar firms if accounting standards are consistent, and that book value is typically positive even when earnings are negative and P/E ratios are not meaningful.

    (Study Session 12, Module 38.3, LOS 38.m)

    Related Material

    SchweserNotes - Book 3

61. (B) **intrinsic value of a stock is the present value of its future dividends.**

    Explanation

    The rationale for dividend discount models is that the fundamental or intrinsic value of a stock is the present value of all its future dividends. Dividend discount models can be applied to either a finite or infinite stream of dividends. There are many ways to calculate the inputs and the estimated stock values may vary significantly with small changes in the inputs.

    (Study Session 12, Module 38.2, LOS 38.e)

    Related Material

    SchweserNotes - Book 3

62. (A) **4.44.**

    Explanation

    P/E = (1 - RR) / (k - g) = 0.4 / (0.14 - 0.05) = 4.44

    (Study Session 12, Module 38.3, LOS 38.j)

    Related Material

    SchweserNotes - Book 3

63. (A) **$19.39.**

    Explanation

    The value of the stock today is the present value of the dividends and the expected stock price, discounted at the equity discount rate:

    $\$1.50/1.16 + \$1.50/1.16^2 + \$1.50/1.16^3 + \$25.00/1.16^3 = \$19.39$

    (Study Session 12, Module 38.2, LOS 38.g)

    Related Material

    SchweserNotes - Book 3

64. (B) an enterprise value model.

Explanation

An enterprise value model relates a firm's enterprise value (the market value of its outstanding equity and debt securities minus its cash and marketable securities holdings) to its EBITDA, operating earnings, or revenue.

(Study Session 12, Module 38.1, LOS 38.b)

Related Material

SchweserNotes - Book 3

65. (B) Special dividend.

Explanation

Special dividends are used when favorable circumstances allow the firm to make a one-time cash payment to shareholders, in addition to any regular dividends the firm pays. Many cyclical firms (e.g., automakers) will use a special dividend to share profits with shareholders when times are good but maintain the flexibility to conserve cash when profits are down.

(Study Session 12, Module 38.1, LOS 38.c)

Related Material

SchweserNotes - Book 3

66. (C) $24.80.

Explanation

First, estimate the price to earnings (P/E) ratio as: (0.45) / (0.124 - 0.065) = 7.63. Then, multiply the expected earnings by the estimated P/E ratio: ($3.25)(7.63) = $24.80.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

67. (A) $102.80.

Explanation

First, calculate the dividends in years 0 through 3: (We need D3 to calculate the value in Year 2)

$D_0 = (0.4)(5) = 2$

$D_1 = (2)(1.2) = 2.40$

$D_2 = (2.4)(1.2) = 2.88$

$D_3 = E_3 = 5(1.2)^3 = 8.64$

Because D_3 will grow at a constant rate, we can use it to estimate a terminal value for the stock at t = 2:

$P_2 = D_3 / (k - g) = 8.64 / (0.12 - 0.05) = \$123.43$

Present value of the cash flows = value of stock = $2.4 / (1.12)^1 + 2.88 / (1.12)^2 + 123.43 / (1.12)^2 = 102.83$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

68. (C) fixed dividend and no maturity.

Explanation

Preferred stock typically pays a fixed dividend and does not mature.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

69. (B) 10.25%.

Explanation

$D_0 (1 + g)/P_0 + g = k$

$1.00(1.05) / 20 + 0.05 = 10.25\%$.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

70. (B) stock dividend.

Explanation

Stock dividends are dividends paid out in new shares of stock instead of cash. While a stock split has essentially the same effects as a stock dividend, it is carried out by declaring that each existing share will become some number of new shares (for example a 2-for-1 split). A private placement is an issuance of new shares to one or a group of investors in exchange for cash, when the issuance is not carried out as a public offering.

(Study Session 12, Module 38.1, LOS 38.c)

Related Material

SchweserNotes - Book 3

71. (C) is being liquidated.

Explanation

Asset-based valuation models are appropriate for a firm that is being liquidated because when a firm ceases to operate as a going concern, its value to equity owners depends on the difference between the fair value of its assets and liabilities. Asset-based models are unlikely to be reliable for estimating the value of firms that have significant intangible assets because fair values of such assets are often difficult to determine. Such a firm may or may not have cyclical earnings.

(Study Session 12, Module 38.3, LOS 38.1)

Related Material

SchweserNotes - Book 3

72. (C) $67.

Explanation

The formula for the value of preferred stock with a perpetual dividend is: D / kp. In this case, $10.0 / 0.15 = \$66.67$.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

73. **(A)** **$5 less than Knight's valuation.**

    Explanation

    You can select the correct answer without calculating the share values. Royal is using a shorter period of supernormal growth and a higher required rate of return on the stock. Both of these factors will contribute to a lower value using the multistage DDM.

    $$\text{Knight}: \frac{\$1(1.10)}{1.09} + \frac{\$1(1.10)^2}{1.09^2} + \frac{\$1(1.10)^3/(0.09 \cdot 0.04)}{1.09^2} = \$24.43$$

    $$\text{Royal}: \frac{\$1(1.10)}{1.09} + \frac{\$1(1.10)^2/(0.10 \cdot 0.04)}{1.10} = \$19.33$$

    Royal's valuation is $5.10 less that Knight's valuation.

    For Further Reference:

    (Study Session 12, Module 38.2, LOS 38.g)

    CFA® Program Curriculum, Volume 4, page 375

    Related Material

    SchweserNotes - Book 3

74. **(A)** **CFs are more easily estimated than future dividends.**

    Explanation

    CFs are not easier to estimate than dividends.

    (Study Session 12, Module 38.3, LOS 38.i)

    Related Material

    SchweserNotes - Book 3

75. **(B)** **2.77.**

    Explanation

    6% profit margin = $650,000/x; x (sales) = $10,833,333.

    Sales per share = $10.83 M/1,000,000 = $10.83 per share.

    P/Sales = $30.00/$10.83 = 2.77.

    (Study Session 12, Module 38.3, LOS 38.j)

    Related Material

    SchweserNotes - Book 3

76. **(A)** **that hold primarily liquid assets.**

    Explanation

    Asset-based analysis works best for firms that hold primarily tangible short-term assets and assets with readily available market values.

    (Study Session 12, Module 38.3, LOS 38.m)

    Related Material

    SchweserNotes - Book 3

77. (B) 8.0% per year.

Explanation

g = ROE x retention rate = [16.68 / 115] x [1 - (7.5 / 16.68)] = 0.145 x (1 - 0.45) = 7.975%.

This growth rate represents the rate at which a company can grow its equity using internally generated funds.

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

78. (B) $20.70.

Explanation

First find the abnormal dividends:

D_1 = $0.75 x 1.25 = $0.9375

D_2 = $0.9375 x 0.95 = $0.89

D_2 is the first dividend that will grow at a constant rate. We can use this dividend in the constant growth DDM to get a value for the stock in period 1:

$0.89 / (0.12 - 0.08) = $22.25

Value of the stock today = ($22.25 + $0.9375) / 1.12 = $20.70.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

79. (B) $ 7.30.

Explanation

time line = $0 now; $0 in yr 1; $0 in yr 2; $1 in yr 3.

P_2 = D3/(k - g) = 1/(.17 - .07) = $10

Note the math. The price is always one year before the dividend date.

Solve for the PV of $10 to be received in two years.

FV = 10; n = 2; i = 17; compute PV = $7.30

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

80. (B) increased, due to a smaller spread between required return and growth.

Explanation

The denominator of the single-stage DDM is the spread between required return Ke, and expected growth rate, g. The smaller the denominator, all else held equal, the larger the computed value.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

81. (C) 7.5.

Explanation

$$P/E = \frac{dividend\,payout\,ratio}{k \cdot g}$$

dividend payout ratio = 1 - retention ratio = 1 - 0.4 = 0.6

growth rate (g) = retention rate x ROE = 0.4 x 15% = 6%

$$P/E = \frac{0.6}{0.14 \cdot 0.06} = 7.5$$

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

82. (B) 7.65%.

Explanation

Growth rate   = (ROE)(Retention Ratio)

= (0.17)(0.45)

= 0.0765 or 7.65%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

83. (C) £81,000,000.

Explanation

Enterprise value = Average EV/EBITDA x company EBITDA

= 10 x £11,000,000 = £110,000,000

Enterprise value = Equity value + debt - cash

Equity value   = Enterprise value - debt + cash

= £110,000,000 - £30,000,000 + £1,000,000 = £81,000,000

(Study Session 12, Module 38.3, LOS 38.k)

Related Material

SchweserNotes - Book 3

84. (C) $121.79.

Explanation

The required return for GoFlower is 0.04 + 1.1(0.12 - 0.04) = 0.128 or 12.8%.
The expect dividend is ($3.10)(1.10) = $3.41.

GoFlower's common stock is then valued using the infinite period dividend discount model (DDM) as ($3.41) / (0.128 - 0.10) = $121.79.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

85. **(B)** **the stock's dividend payout ratio.**

Explanation

A stock's required rate of return is equal to the nominal risk-free rate plus a risk premium. The nominal risk-free rate is approximately equal the real risk-free rate plus expected inflation.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

86. **(B)** **2.22.**

Explanation

The price-to-earnings (P/E) ratio is equal to $(D_1/E_1)/(k - g) = 0.2/(.09 - 0.05) = 5.00$.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

87. **(C)** **8.1.**

Explanation

$k = ER = Rf + Beta(RM - Rf) = 0.06 + (1.2)(0.13 - 0.06) = 0.144$

Dividend payout ratio = 0.60

$P/E = \text{div payout} / (k - g) = 0.6 / (0.144 - 0.07) = 8.1$

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

88. **(A)** **12.5X.**

Explanation

Operating cash flow = Net income per share + Depreciation per share
= $6 + $2 = $8

Price/cash flow = $100 / $8.0X = 12.5X

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

89. **(B)** **non-cash revenue and net changes in working capital are ignored when using earnings per share (EPS) plus non-cash charges as an estimate.**

Explanation

Items affecting actual cash flow from operations are ignored when the EPS plus non-cash charges estimate is used. For example, non-cash revenue and net changes in working capital are ignored. Both remaining responses are arguments in favor of using the price to cash flow approach.

(Study Session 12, Module 38.3, LOS 38.m)

Related Material

SchweserNotes - Book 3

90. **(C)** A stock with a dividend last year of $3.25 per share, an expected dividend growth rate of 3.5%, and a required return of 12.5% is estimated to be worth $36.11.

Explanation

A stock with a dividend last year of $3.25 per share, an expected dividend growth rate of 3.5%, and a required return of 12.5% is estimated to be worth $37.33 using the DDM where $P_o = D_1 / (k - g)$. We are given $D_o = \$3.25$, g = 3.5%, and k = 12.5%. What we need to find is D_1 which equals $D^o \times (1 + g)$ therefore $D_1 = \$3.25 \times 1.035 = \$3.36$ thus $P_o = 3.36 / (0.125 - 0.035) = \$37.33$.

In the answer choice where the stock value is $18.70, discounting the future cash flows back to the present gives the present value of the stock. the future cash flows are the dividend in year 1 plus the dividend and value of the stock in year 2 thus the equation becomes: $V_o = 2.2 / 1.15 + (2.2 + 20) / 1.15^2 = \$18.70$

For the answer choice where the stock value is $31.13 use the DDM which is $P_o = D_1 / (k - g)$. We are given k = 0.08, g = 0.04, and what we need to find is next year's dividend or D_1. D_1 = Expected earnings x payout ratio = $4.15 x 0.3 = $1.245 thus $P_o = \$1.245 / (0.08 - 0.04) = \$31\ 13$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

91. **(B)** increase, if we assume that the growth rate remains constant.

Explanation

When payout ratio increases, the justified P/E multiple increases only if we assume that the growth rate will not change as a result.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

92. **(B)** $33.32.

Explanation

Dividend payout = 1 - earnings retention rate = 1 - 0.4 = 0.6

$R_s = R_f + \beta(R_M - R_f) = 0.06 + 1.2(0.11 - 0.06) = 0.12$

g = (retention rate)(ROE) = (0.4)(0.12) = 0.048

$D_1 = E_1 \times$ payout ratio = $4.00 x 0.60 = $2.40

Price = $D_1 / (k - g) = \$2.40 / (0.12 - 0.048) = \$33.32$

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

93. **(A)** increase.

Explanation

Increase in *ROE*. ROE is a component of g. As g increases, the spread between k_e and g, or the P/E denominator, will decrease, and the P/E ratio will increase.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

94. **(C)** 22.73.

Explanation

Using the CAPM: k_i = 7% + 0.9(0.15 - 0.07) = 14.2%.

Using the DuPont equation: ROE = 8% x 1.5 x 2 = 24%.

g = retention ratio x ROE = 0.50 x 24% = 12%.

P/E = 0.5/(0.142 - 0.12) = 22.73.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

95. **(C)** $160.00.

Explanation

The annual dividend on the preferred is $100(.08) = $8.00. The value of the preferred is $8.00/0.05 = $160.00.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

96. **(C)** 6%.

Explanation

g = (RR)(ROE)

= (0.15)(0.40)

= 0.06 or 6%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

97. **(B)** $90.91.

Explanation

Preferred stock yield (K_p) = bond yield - 0.75% = 6.25% - 0.75% = 5.5%

Value = dividend / K_P = $5 / 0.055 = $90.91.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

98. **(A)** $28.50.

Explanation

$$P_2 = \frac{D_3}{k-g} = \frac{2.25(1.2)^2}{0.15-0.05} = 32.40$$

$$P_0 = \frac{\$2.25}{1.15} + \frac{2.70}{(1.15)^2} + \frac{32.40}{(1.15)^2} = \$28.50$$

For Further Reference :

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

99. (A) 3.33.

Explanation

P/E = .5 / (18%-3%) = 3.33.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

100. (A) $41.67.

Explanation

$E(R) = R_f + \text{beta}(R_M - R_f)$

$K = E(R) = 0.05 + 1(0.15 - 0.05) = 0.15$

Retention (b) = (1 - dividend payout ratio) = 1 - 0.4 = 0.6

g = (ROE)(b) = (0.15)(0.6) = 0.09

$$\text{Value} = \frac{D_1}{k - g} = \frac{\$2.50}{0.15 - 0.09} = \$41.67$$

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

101. (A) 12.65%.

Explanation

Growth Rate = (ROE)(1 - Payout Ratio) = (0.23)(0.55) = 12.65%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

102. (B) decrease.

Explanation

When the beta of a stock increases, its required return will increase. This increases the discount rate investors use to estimate the present value of the stock's future cash flows, which decreases the value of the stock.

(Study Session 12, Module 38.2, LOS 38.e)

Related Material

SchweserNotes - Book 3

103. (B) $74.93.

Explanation

g = Retention x ROE = (0.55) x (0.2) = 0.11

$P_O/E_1 = 0.45 / (0.15 - 0.11) = 11.25$

Next year's earnings $E_1 = E_0 \times (1 + g) = (6.00) \times (1.11) = \$6.66$

$P_0 = 11.25(\$6.66) = \$74.93$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

104. (C) $13.66.

Explanation

Dividend in year 5 = (EPS)(payout ratio) = 2.4 x 0.5 = 1.2

$P_4 = 1.2 / (0.1 - 0.04) = 1.2 / 0.06 = \$20$

$P_0 = PV (P_4) = \$20 / (1.10)^4 = \$13.66$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

105. (C) $153.13.

Explanation

$$\text{Value @ t = 2} = \frac{D_3}{k-g} = \frac{D_0(1+g)^3}{k-g} = \frac{\$6.25(1.07)^3}{0.12-0.07} = \$153.13$$

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.g)

CFA® Program Curriculum, Volume 4, page 375

Related Material

SchweserNotes - Book 3

106. (B) $9.08.

Explanation

$P_4 = D5/(k-g) = 1/(.12-.05) = 14.29$

$P_0 = [FV = 14.29; n = 4; i = 12] = \$9.08.$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

107. (C) 11.61.

Explanation

The required rate of return on equity for Parker will be 12.89% = 6.75% + 1.17(12.00% - 6.75%) and the firm pays 80% (1.40 / 1.75) of its earnings as dividends.

Forward P/E ratio = 0.80 / (0.1289 - 0.0600) = 11.61

Where r = required rate of return on equity, g_n = growth rate in dividends (forever).

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

108. (B)   leave it unchanged.

Explanation

Stock splits divide each existing share into multiple shares. Other things equal, the price of each share decreases proportionately to the number of shares created, resulting in no change in the owner's wealth.

(Study Session 12, Module 38.1, LOS 38.c)

Related Material

SchweserNotes - Book 3

109. (A)   2.0X.

Explanation

Book value of equity = $550,000 - $500,000 = $50,000

Market value of equity = ($100)(1000) = $100,000

Price/Book = $100,000/$50,000 = 2.0X

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

110. (C) $34.57.

Explanation

First find the required rate of return using the CAPM equation.

k = 0.05 + 0.8(0.12 - 0.05) = 10.6%

$1.50(1.06) /(0.106 - 0.06) = $34.57

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

111. (C) $6.40.

Explanation

The high "supernormal" growth in the first three years and the decrease in growth thereafter signals that we should use a combination of the multi-period and finite dividend growth models (DDM) to value the stock.

Step 1: Determine the dividend stream through year 4

- D_1 = $2.00 (given)
- D_2 = D_1 x (1 + g) = 2.00 x (1.25) = $2.50
- D_3 = D_2 x (1 + g) = $2.50 x (1.25) = $3.13
- D_4= D_3 x (1 + g) = $3.13 x (1.08) = $3.38

Step 2: Calculate the value of the stock at the end of year 3 (using D_4)

- P_3 = D_4 / (k_e - g) = $3.38 / (0.15 - 0.08) = $48.29

Step 3: Calculate the PV of each cash flow stream at k_e = 15%, and sum the cash flows. Note:

We suggest you clear the financial calculator memory registers before calculating the value. The present value of:

- $D_1 = $ **1.74** = 2.00 / (1.15)1, or FV = -2.00, N = 1, IN = 15, PV = 1.74
- $D_2 = $ **1.89** = 2.50 / (1.15)2, or FV = -2.50, N= 2, IN = 15, PV = 1.89
- $D_3 = $ **2.06** = 3.13 / (1.15)3, or FV = -3.13, N= 3, IN = 15, PV = 2.06
- $P_3 = $ **31.75** = 48.29 / (1.15)3, or FV = -48.29, N = 3, I/Y = 15, PV = 31.75
- Sum of cash flows = 37.44.
- Thus, the stock is undervalued by 37.44 - 31.00 = approximately **6.40.**

Note: Future values are entered in a financial calculator as negatives to ensure that the PV result is positive. It does not mean that the cash flows are negative. Also, your calculations may differ slightly due to rounding. Remember that the question asks you to select the closest answer.

(Study Session 12, Module 38.1, LOS 38.a)

Related Material

SchweserNotes - Book 3

112. (C) ROE is increased.

Explanation

The increase in growth rate will increase the P/E ratio of a stable firm and growth rate can be calculated by the formula g = ROE x retention ratio. All else being equal an increase in ROE will therefore increase the P/E ratio. Note that decreasing the dividend payout ratio and decreasing the long term growth rate will both serve to decrease the P/E ratio.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

113. (C) 12%.

Explanation

g = (RR)(ROE)

RR = 1 – dividend payout ratio = 1 – 0.4 = 0.6

ROE = NI / Total Equity = 1,000,000 / 5,000,000 = 1 / 5 = 0.2

Note: This is the "simple" calculation of ROE. Since we are only given these inputs, these are what you should use. Also, if given beginning and ending equity balances, use the average in the denominator.

g = (0.6)(0.2) = 0.12 or 12%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

114. (C) $52.68.

Explanation

First, find the future dividends at the supernormal growth rate(s). Next, use the infinite period dividend discount model to find the expected price after the supernormal growth period ends. Third, find the present value of the cash flow stream.

$D_1 = 2.00 (1.25) = 2.50 (1.25) = D_2 = 3.125 (1.20) = D_3 = 3.75$

$P_2 = 3.75/(0.14 - 0.08) = 62.50$

N = 1; I/Y = 14; FV = 2.50; compute PV = 2.19.

N = 2; I/Y = 14; FV = 3.125; compute PV = 2.40.

N = 2; I/Y = 14; FV = 62.50; compute PV = 48.09.

Now sum the PV's: 2.19 + 2.40 + 48.09 = $52.68.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

115. (B) Computech's stock is currently worth $17.46.

Explanation

The dividends for years 1, 2, and 3 are expected to be ($1.62)(1.12) = $1.81; ($1.81)(1.12) = $2.03; and ($2.03)(1.12) = $2.27. At the end of year 2, the stock should sell for $2.27 / (0.15 -0.04) = $20.64.

The stock should sell currently for

($20.64 + $2.03) / $(1.15)^2$ + ($1.81) / (1.15) = $18.71.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

116. (B) 17.14%.

Explanation

g = (RR)(ROE)

g / RR = ROE

0.12 / (1 - 0.30) = 0.12 / 0.70 = 0.1714 or 17.14%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

117. (C) $42.00.

Explanation

2 (1.05) / (0.10 - 0.05) = $42.00

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

118. (C) 10.000.

Explanation

The price/sales ratio is (price per share)/(sales per share) = (40)/(4,000/1,000) = 10.0. Alternatively, the price/sales ratio may be thought of as the market value of the company divided by its sales, or (40 x 1,000)/4,000, or 10.0 again.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

119. (B) 26%.

Explanation

The dividend can be of any size. Suppose it is $1.00.

The purchase price is 1.00 / 0.06 = 16.667.

The sale price is 1.00 / 0.05 = 20.

Kim pays 16.667 and receives 20.00 plus a 1.00 dividend one year later. The rate of return is [(20 + 1)/16.667] - 1 = 26%.

For Further Reference:

(Study Session 12, Module 38.2, LOS 38.f)

CFA® Program Curriculum, Volume 4, page 373

Related Material

SchweserNotes - Book 3

120. (A) product of the retention ratio and the return on equity.

Explanation

Assuming past investments are stable and earnings are calculated to allow for maintenance of past earnings power, then the firm's expected dividend growth rate (g) can be defined as the firm's earnings plowback or retention rate (RR) times the return on the equity (ROE) portion of new investments. This growth rate is also called the sustainable growth rate.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

121. (A) 7.60.

Explanation

Required rate of return on equity will be 12.89% = 6.75% + 1.17(12.00% - 6.75). P/E Ratio = 0.60 / (0.1289 - 0.0500) = 7.60.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

122. (C) P/S multiples are more reliable than P/E multiples because sales data cannot be distorted by management.

Explanation

Because aggressive revenue recognition practices can influence reported sales, it is not the case that sales data cannot be distorted by management.

P/S multiples tend to me less volatile than P/E multiples and can be used to value the equity securities of firms with negative earnings.

(Study Session 12, Module 38.3, LOS 38.m)

Related Material

SchweserNotes - Book 3

123. (C) $63.75.

Explanation

$g = (ROE)(RR) = (0.25)(0.4) = 10\%$

$V = D_1 / (k - g)$

$D_1 = 4.25 (1 - 0.4) = 2.55$

$G = 0.10$

$K - g = 0.14 - 0.10 = 0.04$

$V = 2.55 / 0.04 = \mathbf{63.75}$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

124. (C) $20.00.

Explanation

$P_0 = D_1 / (k - g)$

$R_s = R_f + \beta(R_M - R_f) = 0.05 + 1.5(0.12 - 0.05) = 0.155$

$D_1 = D_0(1 + g) = 2 \times (1.05) = 2.10$

$P_0 = 2.10 / (0.155 - 0.05) = \mathbf{\$20.00}$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

125. (C) $12.10.

Explanation

If the dividend remains constant, g = 0.

$P = D_1 / (k - g) = 1.15 / (0.095 - 0) = \$12.10$

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

126. (C) 17.6.

Explanation

$D_1 = 1.5 \times 1.1 = 1.65$

$$\frac{P_0}{E_1} = \frac{\left(\dfrac{D_1}{E_1}\right)}{(k \cdot g)} = \left(\frac{\dfrac{1.65}{4.70}}{(0.12 \cdot 0.10)}\right) = \left(\frac{0.351}{0.02}\right) = 17.6$$

For Further Reference:

(Study Session 12, Module 38.3, LOS 38.j)

CFA® Program Curriculum, Volume 4, page 385

Related Material

SchweserNotes - Book 3

127. (B) decline.

Explanation

Payout increases from 50% to 55%, cost of equity increases from 10% to 11 %, and dividend growth rate stays at 5%, the P/E will change from 10 to 9.16:

P/E = (D/E) / (k - g).

$P/E_0 = 0.50 / (0.10 - 0.05) = 10$.

$P/E_1 = 0.55 / (0.11 - 0.05) = 9.16$.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

128. (A) 10.73%.

Explanation

g = (ROE)(RR)

g = (19.5)(1 - 0.45)

g = (0.195)(0.55)

= 0.1073 or 10.73%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

129. (B) R70 million.

Explanation

Market value of assets = 0.9(R100 million) + R20 million = R110 million

Market value of liabilities = R40 million

Estimated net value of company = R110 million - R40 million = R70 million.

(Study Session 12, Module 38.3, LOS 38.1)

Related Material

SchweserNotes - Book 3

130. (B)   the model used is not highly sensitive to its input values.

Explanation

In general, an analyst can be more confident about an estimate of intrinsic value if the model used is not highly sensitive to changes in its inputs. If a large number of analysts follow a security, its market value is more likely to be a reliable estimate of its intrinsic value. A security that does not trade frequently or in a liquid market may remain mispriced for an extended time, and thus may not result in a profit within the investment horizon even if the analyst's estimate of intrinsic value is correct.

(Study Session 12, Module 38.1, LOS 38.a)

Related Material

SchweserNotes - Book 3

131. (A)   it is a stable and simple benchmark for comparison to the market price.

Explanation

Book value provides a relatively stable measure of value that can be compared to the market price. For investors who mistrust the discounted cash flow estimates of value, it provides a much simpler benchmark for comparison. Book value may or may not be closer to the market value. A firm may have negative book value if it shows accounting losses consistently.

(Study Session 12, Module 38.3, LOS 38.i)

Related Material

SchweserNotes - Book 3

132. (B) $41.77.

Explanation

Using the Capital Asset Pricing Model, we can determine the discount rate equal to 0.06 + 2(0.15 - 0.06) = 0.24. The dividends next year are expected to be $1.50 x 1.2 = $1.80. The present value of the future stock price and the future dividend are determined by discounting the expected cash flows at the discount rate of 24%: (50 + 1.8) / 1.24 = $41.77.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

133. (C)   market value of stock plus market value of debt, minus cash and short-term investments.

Explanation

Enterprise value = market value of common and preferred stock + market value of debt -cash and short-term investments.

(Study Session 12, Module 38.3, LOS 38.k)

Related Material

SchweserNotes - Book 3

134. (B)   8.0   52%

Explanation

P/E = (dividend payout ratio)/(k - g)

P/E = 0.48/(0.14 - 0.08) = 8

The retention ratio = (1 - dividend payout) = (1 - 0.48) = 52%

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

135. (A) $23.91.

Explanation

With a required rate of return of 15%, the most the investor should pay for the stock today is (26 + 1.50) / 1.15 = $23.91.

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

136. (B)   4.8%.

Explanation

g = ROE x retention ratio = ROE x (1 - payout ratio) = 12 (0.4) = 4.8%

(Study Session 12, Module 38.2, LOS 38.g)

Related Material

SchweserNotes - Book 3

137. (C)   The growth rate of the firm is higher than the overall growth rate of the economy.

Explanation

Other assumptions of the DDM are: dividends grow at a constant rate and the growth rate continues for an infinite period.

(Study Session 12, Module 38.2, LOS 38.h)

Related Material

SchweserNotes - Book 3

138. (C)   An advantage of the price/sales ratio is that it is meaningful even for distressed firms.

Explanation

The P/S ratio is meaningful even for distressed firms, since sales revenue is always positive. This is not the case for the P/E and P/BV ratios, which can be negative.

In the P/BV ratio book value is an appropriate measure of net asset value for firms that primarily hold liquid assets.

Analysts use several different definitions of cash flow (CFO, adjusted CFO, FCFE, EBITDA, etc.) to calculate P/CF ratios.

When earnings are negative, the P/E ratio is meaningless.

(Study Session 12, Module 38.3, LOS 38.i)

Related Material

SchweserNotes - Book 3

139. (B) $75.00.

Explanation

The annual dividend on the preferred is $100(.06) = $6.00. The value of the preferred is $6.00/0.08 = $75.00.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3

140. (A)   indeterminate.

Explanation

The net effect on firm value of increasing the dividend payout ratio is ambiguous because the positive effect of larger dividends may be offset by a negative effect on the firm's sustainable growth rate. If increasing the payout ratio always increased firm value, all firms would have 100% payout ratios.

(Study Session 12, Module 38.3, LOS 38.j)

Related Material

SchweserNotes - Book 3

140. (C) $62.50.

Explanation

$5.00/0.08 = $62.50.

(Study Session 12, Module 38.2, LOS 38.f)

Related Material

SchweserNotes - Book 3