

CHAPTER 24**NON-CURRENT (LONG-TERM)
LIABILITIES**

1. (B) **\$9,737,568**

Explanation

Under the effective interest rate method, the bond liability is equal to the present value of the remaining cash flows discounted at the market rate of interest at the issue date. At the end of this year, there are 3 annual payments of \$600,000 and one payment of \$10,000,000 remaining. Using your financial calculator, the present value is \$9,737,568 (N = 3, I = 7, PMT = 600,000, FV = 10,000,000, Solve for PV).

(Study Session 7, Module 24.2, LOS 24.b)

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2. (A) **\$1,163,000.**

Explanation

Cash interest paid each year is $5\% \times \$10,000,000 = \$500,000$. To calculate the effective interest rate: N = 3; PV = 8,000,000; FV = -10,000,000; PMT = -500,000; CPT I/Y = 13.55%

The initial bond liability equals the proceeds raised of \$8,000,000. Interest expense for 20X1 = $13.55\% \times \$8,000,000 = \$1,084,000$. The bond liability amortizes (toward face value at maturity) by the difference between interest expense and cash interest paid: $\$1,084,000 - \$500,000 = \$584,000$.

The bond liability at the beginning of 20X2 = $\$8,000,000 + \$584,000 = \$8,584,000$. Interest expense for 20X2 = $13.55\% \times \$8,584,000 = \$1,163,132$.

(Study Session 7, Module 24.2, LOS 24.b)

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3. (B) **before maturity, but not at maturity.**

Explanation

If a firm redeems a bond before maturity for a price that is different from the carrying value of the bond liability, the firm will recognize the difference as a gain or a loss. At maturity, the carrying value of the bond liability is equal to the face value of the bond, therefore the firm does not experience a gain or loss by repaying the face value.

(Study Session 7, Module 24.3, LOS 24.c)

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4. (C) \$210,833.

Explanation

Step 1: Compute the proceeds raised (i.e., the present value of the bond): Since the yield is above the coupon rate the bond will be issued at a discount.

$$\begin{aligned} \text{FV} &= \$5,000,000; N = (10 \times 2) = 20; \text{PMT} = (0.08 / 2)(5 \text{ million}) \\ &= \$200,000; I/Y = (9 / 2) = 4.5; \text{CPT} \rightarrow \text{PV} = -\$4,674,802 \end{aligned}$$

Step 2: Compute the interest expense at the end of the first period.
 $= (0.045)(4,674,802) = \$210,366$

Step 3: Compute the interest expense at the end of the second period.
 $= (\text{new balance sheet liability})(\text{current interest rate})$
 $= \$4,674,802 + \$10,366 = \$4,685,168$ new balance sheet liability
 $(0.045)(4,685,168) = \$210,833$

(Study Session 7, Module 24.2, LOS 24.b)

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5. (B) on the balance sheet as a net pension asset or liability.

Explanation

A net pension asset or net pension liability defined benefit plan is the difference between the fair value of the plan's assets and the estimated benefit obligation. A plan with a net pension asset is said to be overfunded, and a plan with a net pension liability is said to be underfunded.

(Study Session 7, Module 24.4, LOS 24.i)

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6. (A) The market rate of interest on the balance sheet date.

Explanation

The market rate on the balance sheet date is not typically disclosed. The amount of principal scheduled to be repaid over the next five years and collateral pledged (if any) are generally included in the footnotes to the financial statements.

(Study Session 7, Module 24.3, LOS 24.e)

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7. (A) 923.

Explanation

$FV = 1000$; $PMT = 80/2$; $N = 5 \times 2$; $I/Y = 10/2$; solve for $PV = 923$.

(Study Session 7, Module 24.1, LOS 24.a)

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8. (C) increase its leverage ratios and decrease its coverage ratios.

Explanation

Leverage ratios will increase because debt increases while equity remains unchanged, and (assuming equity is positive) debt increases proportionally by more than assets. Coverage ratios decrease because interest payments increase while EBIT is unchanged.

(Study Session 7, Module 24.1, LOS 24.a)

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9. (A) a discount.

Explanation

If the coupon rate is less than the market rate, the bond must be sold at a discount so the effective rate on the bond equals the market rate.

(Study Session 7, Module 24.1, LOS 24.a)

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10. (C) operating leases, but not finance leases.

Explanation

For an operating lease, the lessor retains the leased asset on its balance sheet and recognizes depreciation expense over its life. For a finance lease, the lessor removes the leased asset from its balance sheet and recognizes a lease receivable.

(Study Session 7, Module 24.4, LOS 24.h)

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11. (C) \$9,715,850.

Explanation

The initial liability is the amount received from the creditor, not the par value of the bond. $N = 8$; $IN = 11/2 = 5.5$; $PMT = 500,000$; $FV = 10,000,000$;

$CPT \rightarrow PV = \$9,683,272$.

The interest expense is the effective interest rate (the market rate at the time of issue) times the balance sheet liability. $\$9,683,272 \times 0.055 = \$532,580$.

The value of the liability will change over time and is a function of the initial liability, the interest expense and the actual cash payments. In this case, it increases by the difference between the interest expense and the actual cash payment: $\$532,580 - \$500,000 = \$32,580 + \$9,683,272 = \$9,715,852$.

Tip: Knowing that the liability will increase is enough to select choice C without performing this last calculation. Entering $N = 7$ and solving for PV also produces $\$9,715,852$.

For Further Reference:

(Study Session 7, Module 24.2, LOS 24.b)

CFA® Program Curriculum, Volume 3, page 440

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12. (C) Debt-to-equity ratio.

Explanation

For the purpose of analysis, the value of debt should be adjusted for a change in interest rates. This will change the debt-to-equity ratio.

(Study Session 7, Module 24.2, LOS 24.b)

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13. (C) earnings of the firm increase over the life of the bond as the bond premium is amortized.

Explanation

As bond premium is amortized, interest expense will be successively lower each period, thus increasing earnings over the life of the bond.

(Study Session 7, Module 24.2, LOS 24.b)

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14. (C) a gain on redemption.

Explanation

The firm can call the bonds for 101% of \$10 million, or \$10,100,000. Redeeming bonds for less than the carrying value of the bond liability results in a gain.

(Study Session 7, Module 24.3, LOS 24.c)

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15. (C) repurchasing common shares.

Explanation

Debt covenants exist to protect creditors. Repurchasing common shares is a use of cash that rewards equity investors but might harm creditors by reducing the firm's solvency. Decreasing dividends or issuing new shares would increase the cash available to repay creditors.

(Study Session 7, Module 24.3, LOS 24.d)

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16. (B) \$935.

Explanation

Using the effective interest method, the value of the liability is calculated using the bond's yield at issuance. At the end of 20x1 the bond will have 8 semiannual periods remaining until maturity.

$N = 8$; $IN = 10 / 2 = 5$; $PMT = 8 / 2 \times 1,000 = 40$; $FV = 1,000$;

$CPT PV = -935.37$.

(Study Session 7, Module 24.2, LOS 24.b)

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17. (A) \$1,346,549.

Explanation

The interest paid on the bond will be the difference between the future value of the bond of \$5,000,000 and the proceeds of the bond when it was originally issued.

First find the present value of the bond found by $N = 8$; $FV = 5,000,000$; $I = 4$; $PMT = 0$; $CPT \rightarrow PV = -3,653,451$. This is the amount of money the bond generated when it was originally issued.

Then take the difference between the \$5,000,000 future price and the \$3,653,451 from the proceeds = \$1,346,549 which is the interest paid on the bond.

(Study Session 7, Module 24.2, LOS 24.b)

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18. (A) a finance lease.

Explanation

Under IFRS and U.S. GAAP, a lessor will classify a lease as either an operating lease or a finance lease. If it is classified as a finance lease, the leased asset is removed from the lessor's balance sheet and interest income is recognized over the life of the lease. A sales-type lease is a classification under U.S. GAAP that does not affect the accounting treatment.

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19. (B) 10,181,495 2,437,893

Explanation

To determine the bond's market value one year from now: $FV = 10,000,000$; $N = 4$; $I = 4$; $PMT = 450,000$; $CPT \rightarrow PV = \$10,181,495$.

To determine the total interest expense:

1. $FV = 10,000,000$; $N = 6$; $I = 4$; $PMT = 450,000$; $CPT \rightarrow PV = \$10,262,107$.
This is the price the purchaser of the bond will pay to the issuer of the bond. From the issuer's point of view this is the amount the issuer will receive from the bondholder.

2. Total interest expense over the life of the bond is equal to the difference between the amount paid by the issuer and the amount received from the bondholder.

$$[(6)(450,000) + 10,000,000] - 10,262,107 = 2,437,893$$

(Study Session 7, Module 24.2, LOS 24.b)

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20. (A) both current and long-term liabilities.

Explanation

Bonds that will mature in the next year will appear on the balance sheet as "current portion of long-term debt," which is a current liability. Bonds that will mature later than the next year will appear as long-term debt.

(Study Session 7, Module 24.2, LOS 24.b)

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21. (A) -\$900,000.

Explanation

The coupon payment is a cash outflow from operations. $(\$10,000,000 \times 0.09) = \$900,000$.

(Study Session 7, Module 24.2, LOS 24.b)

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22. (A) financing.

Explanation

Issuing securities is a financing activity. Cash from financing (CFF) is increased by the amount of the proceeds.

(Study Session 7, Module 24.1, LOS 24.a)

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23. (C) **\$3,495.**

Explanation

Face value of bonds = \$135,662.

Proceeds from bond sale: $I/Y = 8.00\%$; $N = 4$; $PMT = \$135,662 \times 0.07 = \$9,496.34$; $FV = \$135,662$; $CPT PV = \$131,169$

Unamortized discount at issuance = $\$135,662 - \$131,169 = \$4,493$. First year interest expense = $\$131,169 \times 0.08 = \$10,494$.

Coupon payment = $\$135,662 \times 0.07 = \$9,496$.

Change in discount = $\$10,494 - \$9,496 = \$998$.

Discount at the end of first year = $\$4,493 - \$998 = \$3,495$.

(Study Session 7, Module 24.1, LOS 24.a)

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24. (A) **the asset and liability are equal.**

Explanation

At the initiation of a lease, the lessee records an asset and a liability that are both equal to the present value of the promised lease payments.

(Study Session 7, Module 24.4, LOS 24.g)

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25. (A) **cash flows from financing will be increased by the par value of the bond issue.**

Explanation

Upon issuance, cash flow from financing will be increased by the amount of the proceeds.

(Study Session 7, Module 24.2, LOS 24.b)

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26. (A) **\$316,448.**

Explanation

Newberg, upon issuance of the bonds, recorded bonds payable of $N = 2 \times 7 = 14$, $PMT = \$175,000$, $I/Y = 6/2 = 3$, $FV = \$5,000,000$, $CPT PV = \$5,282,402$.

Interest expense June 30, 2005, was $\$5,282,402 \times (0.06 / 2) = \$158,472$. The coupon payment was $\$175,000$, reducing bonds payable to $\$5,282,402 - (\$175,000 - \$158,472) = \$5,265,874$.

Interest expense December 31, 2005, was $\$5,265,874 \times (0.06 / 2) = \$157,976$. Total interest expense in 2005 was $\$158,472 + \$157,976 = \$316,448$.

(Study Session 7, Module 24.2, LOS 24.b)

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27. (B) **increase.**

Explanation

A portion of the discount must be amortized to the interest expense each year. The amortized amount is debited to interest expense and credited to debt. So debt goes up. The interest expense is debt times the effective interest rate. Thus, interest expense will increase over time.

(Study Session 7, Module 24.1, LOS 24.a)

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28. (A) **\$3,653,451 \$3,799,589**

Explanation

The initial liability is: $N = 8$, $IN = 4\%$, $PMT = 0$, $FV = \$5,000,000$, Compute $PV = -\$3,653,451$. The value of the liability 6 months is: $[\$3,653,451 + \{0.04(\$3,653,451)\}] = \$3,799,589$ (Study Session 7, Module 24.1, LOS 24.a)

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29. (A) **the present value of the lease payments.**

Explanation

With a finance lease, both an asset and liability are reported on the lessee's balance sheet, equal to the present value of the promised lease payments.

(Study Session 7, Module 24.4, LOS 24.g)

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30. (B) **10,100,000 CFF outflow.**

Explanation

Cash paid to redeem a bond is classified as a cash flow from financing activities.

(Study Session 7, Module 24.3, LOS 24.c)

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31. (A) **regardless of whether the lease is a finance or operating lease.**

Explanation

For both finance and operating leases, both IFRS and U.S. GAAP require an asset and a liability to be recorded on the lessee's balance sheet, unless the lease is short-term or (under IFRS) for a low-value asset.

(Study Session 7, Module 24.4, LOS 24.g)

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32. (A) a decreasing trend in the ratio over the life of the bond.

Explanation

Net book value of debt decreases over the life of the bond because the premium amortizes. Stockholders' equity increases over the life of the bond because interest expense decreases each period. This results in a decreasing trend in the debt/equity ratio over the life of the bond, compared to the trend if a bond had been issued at par value.

(Study Session 7, Module 24.4, LOS 24.j)

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33. (C) less than \$50 million.

Explanation

When the coupon rate on a bond is lower than the market rate (yield to maturity), the bond will sell for a discount. If bonds are issued at a discount, the proceeds raised will be less than their face value.

(Study Session 7, Module 24.1, LOS 24.a)

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34. (C) The present value of the future bond payments discounted at the coupon rate of the bonds.

Explanation

When analyzing disclosures related to financing liabilities, analysts would review the balance sheet and find the present value of the promised future liability payments. These payments would then be discounted at the rate in effect at issuance (i.e., the yield to maturity), not the coupon rate of the bonds

(Study Session 7, Module 24.3, LOS 24.e)

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35. (B) the lessor.

Explanation

With an operating lease, the actual leased asset remains on the lessor's balance sheet and the lessor recognizes depreciation expense on the asset. The lessee is required to recognize an asset and a liability equal to the present value of the promised lease payments.

(Study Session 7, Module 24.4, LOS 24.h)

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36. (A) Only one is correct

Explanation

Lenders and other creditors use debt covenants in their lending agreements to restrict the activities of the debtor that could adversely impact the creditors' position. If any bond covenant is violated, the firm is in technical default on its debt. The creditors can demand payment of the debt, however, the terms are generally renegotiated. As such, the company does not automatically enter into bankruptcy and have its assets liquidated by the creditors.

(Study Session 7, Module 24.3, LOS 24.d)

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37. (A) \$97.9 million.

Explanation

Under IFRS, bond liabilities are reported under the effective interest method and issuance costs are deducted from the proceeds to determine the initial liability. The yield at issuance is: PV = 97.5 million; FV = -100 million; PMT = -5 million; N = 10; CPT I/Y = 5.33. Change N to 8 and CPT PV after two years as 97.9 million.

For Further Reference:

(Study Session 7, Module 24.2, LOS 24.b)

CFA® Program Curriculum, Volume 3, page 440

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[Schweser Notes - Book 2](#)

38. (A) low leverage ratios and high coverage ratios.

Explanation

Low leverage ratios suggest the firm has relatively little debt compared to its equity and assets. High coverage ratios suggest the firm generates enough earnings to meet its interest payments.

(Study Session 7, Module 24.4, LOS 24.j)

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39. (C) \$1,750.

Explanation

Face value of bonds = \$67,831

Proceeds from bond sale: I/Y = 8; N = 4; PMT = \$67,831 x 0.07 = \$4,748.17;

FV = \$67,831; CPT PV = \$65,582

Unamortized discount at issuance = \$67,831 - \$65,582 = \$2,249. First year interest expense = \$65,582 x 0.08 = \$5,247

Coupon payment = \$67,831 x 0.07 = \$4,748

Change in discount = \$5,247 - \$4,748 = \$499

Unamortized discount at end of first year = \$2,249 - \$499 = \$1,750.

(Study Session 7, Module 24.2, LOS 24.b)

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40. (A) **assets by \$9.626 million.**

Explanation

Proceeds raised are the present value of the bond: $FV = 10,000,000$; $PMT = 560,000$; $I/Y = 6.5$; $N = 5$; $CPT PV = 9,625,989$. At issuance, the firm will receive cash flow from financing of \$9.626 million. Assets (cash) and liabilities (long-term debt) will increase by this amount.

(Study Session 7, Module 24.1, LOS 24.a)

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41. (C) **protect bondholders from the actions of equity owners.**

Explanation

The primary purpose of bond covenants is to protect bondholders from actions by the equity owners that would tend to reduce the value of their claims against the company. The other choices are purposes of a bond indenture.

(Study Session 7, Module 24.2, LOS 24.b)

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42. (B) **\$2,246.65.**

Explanation

Coupon payment = $(\$67,831)(0.07) = \$4,748.17$.

Present value of bond: $FV = \$67,831$, $N = 4$, $I = 8$, $PMT = \$4,748.17$, $CPT PV = \$65,584.35$. Discount = $\$67,831 - \$65,584.35 = \$2,246.65$.

(Study Session 7, Module 24.1, LOS 24.a)

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43. (C) **the market rate.**

Explanation

Interest expense is always equal to the book value of the bond at the beginning of the period multiplied by the market rate at issuance.

(Study Session 7, Module 24.2, LOS 24.b)

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44. (A) **the defined benefit plan.**

Explanation

Only a defined benefit plan has a funded status that would appear on the balance sheet as an asset or liability. Employer payments into a defined contribution plan are recognized as expenses in the period incurred.

(Study Session 7, Module 24.4, LOS 24.i)

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45. (C) **The value of the bond will be amortized toward zero over the life of the bond.**

Explanation

The value of the bond's premium will be amortized toward zero over the life of the bond, not the value of the bond.

(Study Session 7, Module 24.2, LOS 24.b)

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46. (B) **maintain a debt-to-equity ratio of no less than 2:1.**

Explanation

A lender wants to prohibit the borrower from becoming more leveraged. This can be done by requiring a leverage ratio that is no more than a specified amount. Reducing leverage would be beneficial to the lender by lowering risk.

(Study Session 7, Module 24.3, LOS 24.d)

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47. (B) **may be made obsolete by rapid technological advances.**

Explanation

One of the motivations for leasing assets instead of purchasing them is that a leased asset that has been made obsolete by new technology can be returned to the lessor at the end of the lease. Neither of the other choices is a motivation for leasing assets instead of purchasing them

(Study Session 7, Module 24.4, LOS 24.f)

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48. (A) **A company should initially record zero-coupon bonds at their discounted present value.**

Explanation

The liability initially recorded for a zero-coupon bond is equal to the proceeds received, which is the present value of the principal repayment discounted at the company's normal borrowing rate. Interest expense is found by applying the discount rate to the book value of debt at the beginning of the period, and there is no cash outflow from operations for a zero coupon bond.

(Study Session 7, Module 24.1, LOS 24.a)

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