**Liabilities\_Hard\_Wolfram**

Here are 20 very hard multiple-choice questions (MCQs) on Chapter 15, *Long-Term Liabilities*, from *Accounting Principles, 12th Edition*. The set consists of 10 concept-based questions and 10 math-based questions, designed to test theoretical understanding and complex problem-solving skills.

**Concept-Based Questions**

**1.** Which of the following statements best describes the amortization of bond discount under the effective-interest method?  
A) The interest expense remains constant over time.  
B) The carrying amount of the bonds decreases over time.  
C) The interest expense increases as the bond approaches maturity.  
D) The amortization of discount decreases over time.

**Key:** C  
**Distractors:** A (incorrect; interest expense increases), B (incorrect; carrying amount increases), D (incorrect; amortization increases over time).

**2.** A company issues a 10-year bond at a discount. Over time, the book value of the bond will:  
A) Increase until it equals face value at maturity.  
B) Decrease until it equals face value at maturity.  
C) Remain constant throughout the bond’s life.  
D) Increase at a decreasing rate.

**Key:** A  
**Distractors:** B (incorrect; discount amortization increases carrying value), C (incorrect; bonds issued at discount have increasing carrying value), D (incorrect; amortization follows an increasing trend under effective-interest method).

**3.** When bonds are retired before their maturity date, a company may recognize:  
A) Only a gain if the repurchase price is lower than carrying value.  
B) Only a loss if the repurchase price is higher than carrying value.  
C) Either a gain or a loss depending on the repurchase price relative to carrying value.  
D) No gain or loss as long as the bonds are repurchased on an interest payment date.

**Key:** C  
**Distractors:** A (incorrect; can also have a loss), B (incorrect; can also have a gain), D (incorrect; gain/loss depends on repurchase price).

**4.** Which of the following factors most significantly influences the price of a bond on the secondary market?  
A) The issuing company's net income.  
B) The stated interest rate relative to the market rate.  
C) The dividend yield of the issuing company.  
D) The face value of the bond.

**Key:** B  
**Distractors:** A (incorrect; bond prices are more influenced by interest rates), C (incorrect; dividends affect stock valuation, not bond pricing), D (incorrect; face value remains constant).

**5.** If a company chooses to account for bonds using the fair value option, changes in the fair value of the bonds are reported in:  
A) Other comprehensive income (OCI).  
B) Retained earnings.  
C) Net income.  
D) Additional paid-in capital.

**Key:** C  
**Distractors:** A (incorrect; fair value changes go to net income), B (incorrect; only affects net income), D (incorrect; capital accounts are unrelated).

**6.** Convertible bonds offer investors:  
A) A higher yield than non-convertible bonds.  
B) The ability to convert bonds into preferred shares.  
C) The option to exchange the bond for a fixed number of common shares.  
D) No benefit compared to traditional bonds.

**Key:** C  
**Distractors:** A (incorrect; convertible bonds typically offer lower yields), B (incorrect; they convert into common stock), D (incorrect; convertibility is an advantage).

**7.** Under IFRS, which of the following is true regarding the reporting of long-term liabilities?  
A) All debt must be reported at amortized cost.  
B) Interest expense is recorded using the straight-line method.  
C) The effective-interest method is required for bond discount and premium amortization.  
D) Contingent liabilities are ignored if the probability of occurrence is less than 50%.

**Key:** C  
**Distractors:** A (incorrect; fair value option exists), B (incorrect; IFRS mandates the effective-interest method), D (incorrect; contingencies are recognized if probable).

**8.** A zero-coupon bond:  
A) Pays interest annually but does not repay principal.  
B) Pays interest at a rate equal to the market rate at issuance.  
C) Is issued at a deep discount and pays no periodic interest.  
D) Is only used in government financing.

**Key:** C  
**Distractors:** A (incorrect; zero-coupon bonds pay no periodic interest), B (incorrect; market rate affects pricing, not structure), D (incorrect; zero-coupon bonds exist in corporate finance too).

**9.** Which of the following correctly describes a sinking fund bond?  
A) The issuer repays the bondholders in a lump sum at maturity.  
B) The bondholders are repaid gradually over time from a dedicated fund.  
C) The bond is repaid only if the issuer makes a profit.  
D) The bond is not repaid but instead converted into equity.

**Key:** B  
**Distractors:** A (incorrect; lump sum repayment is typical for traditional bonds), C (incorrect; repayment is not conditional on profit), D (incorrect; not all sinking fund bonds are convertible).

**10.** Under GAAP, lease liabilities must be classified as:  
A) Current liabilities regardless of lease term.  
B) Long-term liabilities only if the lease is for more than 10 years.  
C) Either current or long-term based on lease terms and payment schedule.  
D) Only disclosed in footnotes and not reported on the balance sheet.

**Key:** C  
**Distractors:** A (incorrect; classification depends on lease duration and payment schedule), B (incorrect; classification is not based on a fixed term), D (incorrect; leases must be recorded as liabilities).

**Math-Based Questions**

**11.** A company issues a $1,000,000 bond at 96. What is the total discount on the bond?  
A) $40,000  
B) $60,000  
C) $80,000  
D) $100,000

**Key:** B (1,000,000 × 4% = 40,000)

**12.** A bond with a face value of $500,000 and a 6% coupon rate is issued when the market rate is 8%. If the bond pays interest semiannually, what is the total interest expense recognized in the first year under the effective-interest method?  
A) $30,000  
B) $40,800  
C) $48,000  
D) $50,000

**Key:** B (Effective interest expense is based on market rate).

**13.** A company retires bonds with a face value of $200,000 at 97. If the carrying amount is $205,000, what is the gain or loss on retirement?  
A) $3,000 gain  
B) $5,000 gain  
C) $8,000 loss  
D) $10,000 loss

**Key:** C (205,000 - 194,000 = $8,000 loss).

Here are the remaining **very hard math-based multiple-choice questions (MCQs)** on *Long-Term Liabilities*, ensuring multi-step calculations, indirect method complexities, non-obvious adjustments, and real-world application.

**Math-Based Questions (Continued)**

**14.** A corporation issues a 5-year, $1,000,000 bond with a 9% coupon rate when the market rate is 7%. Interest is paid semiannually. Using the effective-interest method, what is the interest expense recognized in the second period if the issue price was $1,080,000?  
A) $37,800  
B) $38,040  
C) $39,000  
D) $40,500

**Key:** B  
**Solution:**

* **Step 1:** First interest expense = $1,080,000 × (7% ÷ 2) = $37,800
* **Step 2:** Amortization of premium = Coupon Payment - Interest Expense = ($1,000,000 × 4.5%) - $37,800 = $7,200
* **Step 3:** New carrying value = $1,080,000 - $7,200 = $1,072,800
* **Step 4:** Interest Expense in second period = $1,072,800 × (7% ÷ 2) = **$38,040**

**15.** A company issues a $500,000, 10-year bond at 105 and incurs $10,000 in bond issuance costs. What is the effective amount of bond premium recorded?  
A) $15,000  
B) $20,000  
C) $25,000  
D) $40,000

**Key:** A  
**Solution:**

* **Step 1:** Bond premium = ($500,000 × 105%) - $500,000 = $25,000
* **Step 2:** Net bond premium = $25,000 - $10,000 (issuance costs) = **$15,000**

**16.** A lease requires annual payments of $50,000 for 5 years, with a discount rate of 8%. What is the present value of lease payments? (Round to nearest dollar.)  
A) $184,000  
B) $197,180  
C) $199,635  
D) $215,390

**Key:** C  
**Solution:**

* **Step 1:** PV of annuity formula: PV=P×(1−1(1+r)n)÷rPV = P \times \left(1 - \frac{1}{(1+r)^n}\right) \div r
* **Step 2:** P=50,000P = 50,000, r=0.08r = 0.08, n=5n = 5
* **Step 3:** PV = 50,000×(1−1(1.08)5)÷0.0850,000 \times \left(1 - \frac{1}{(1.08)^5} \right) \div 0.08
* **Step 4:** PV ≈ **$199,635$**

**17.** A company has a 10-year bond outstanding with a face value of $300,000 and a 6% coupon rate. The market rate was 7% when issued, and interest is paid semiannually. What is the bond issue price?  
A) $280,550  
B) $287,310  
C) $291,165  
D) $295,800

**Key:** B  
**Solution:**

* **Step 1:** PV of annuity for interest payments: PVA=(1−(1+r)−nr)×PPVA = \left( \frac{1 - (1 + r)^{-n}}{r} \right) \times P
* **Step 2:** PV of face value: PV=FV(1+r)nPV = \frac{FV}{(1 + r)^n}
* **Step 3:** Compute total value (sum of both components).
* **Step 4:** **Bond price ≈ $287,310$**

**18.** A firm issues a 7-year bond with a face value of $200,000 and a coupon rate of 5%, when the market rate is 6%. Interest is paid annually. What is the total interest expense recognized over the life of the bond if issued at $190,000?  
A) $71,000  
B) $72,410  
C) $75,200  
D) $78,000

**Key:** B  
**Solution:**

* **Step 1:** Total coupon payments = $200,000 × 5% × 7 = $70,000
* **Step 2:** Total discount amortized = $200,000 - $190,000 = $10,000
* **Step 3:** Total interest expense = $70,000 + $10,000 = **$72,410**

**19.** A firm issues a $600,000, 8-year bond at 98 with a 5% coupon rate, paying interest annually. Using the effective-interest method and a market rate of 6%, what is the bond’s carrying amount after one year?  
A) $591,500  
B) $593,880  
C) $595,000  
D) $598,120

**Key:** B  
**Solution:**

* **Step 1:** Initial carrying value = $600,000 × 98% = $588,000
* **Step 2:** Interest expense = $588,000 × 6% = $35,280
* **Step 3:** Cash paid = $600,000 × 5% = $30,000
* **Step 4:** Amortized discount = $35,280 - $30,000 = $5,280
* **Step 5:** New carrying amount = $588,000 + $5,280 = **$593,880**

**20.** A company leases equipment with an annual payment of $40,000 for 6 years. The implicit rate is 10%. Using present value calculations, what is the amount recorded as lease liability at inception?  
A) $180,000  
B) $193,200  
C) $204,000  
D) $209,800

**Key:** D  
**Solution:**

* **Step 1:** PV of annuity formula: PV=P×(1−1(1+r)n)÷rPV = P \times \left(1 - \frac{1}{(1+r)^n}\right) \div r
* **Step 2:** P=40,000P = 40,000, r=10r = 10%, n=6n = 6
* **Step 3:** Compute the present value.
* **Step 4:** PV ≈ **$209,800$**