

54

FIXED-INCOME BOND
VALUATION- PRICES & YIELDS

1. A bond with a 12% annual coupon, 10 years to maturity and selling at 88 percent of par has a yield to maturity of:
 - (A) between 10% and 12%.
 - (B) between 13% and 14%.
 - (C) over 14%.

2. An annual-pay, 4% coupon, 10-year bond has a yield to maturity of 5.2%. If the price of this bond is unchanged two years later, its yield to maturity at that time is:
 - (A) 5.2%.
 - (B) less than 5.2%.
 - (C) greater than 5.2%.

3. An analyst wants to estimate the yield to maturity on a non-traded 4-year, annual pay bond rated A. Among actively traded bonds with the same rating, 3-year bonds are yielding 3.2% and 6-year bonds are yielding 5.0%. Using matrix pricing the analyst should estimate a YTM for the non-traded bond that is closest to:
 - (A) 3.6%.
 - (B) 3.8%.
 - (C) 4.1%.

4. Other things equal, for option-free bonds:
 - (A) a bond's value is more sensitive to yield increases than to yield decreases.
 - (B) the value of a long-term bond is more sensitive to interest rate changes than the value of a short-term bond.
 - (C) the value of a low-coupon bond is less sensitive to interest rate changes than the value of a high-coupon bond.

5. A bond with three years to maturity pays an annual coupon of 6%. Assuming a yield to maturity of 7%, the price as a percent of par closest to:
 - (A) 102.67.
 - (B) 97.38.
 - (C) 92.03.

6. Assume a bond's quoted price is 105.22 and the accrued interest is \$3.54. The bond has a par value of \$100. What is the bond's clean price?
- (A) \$ 108.76.
 - (B) \$ 101.68.
 - (C) \$ 105.22.
7. What value would an investor place on a 20-year, \$1,000 face value, 10% annual coupon bond, if the investor required a 9% rate of return?
- (A) \$ 879.
 - (B) \$ 920.
 - (C) \$ 1,091.
8. A year ago a company issued a bond with a face value of \$1,000 with an 8% coupon. Now the prevailing market yield is 10%. What happens to the bond? The bond:
- (A) is traded at a market price higher than \$1,000.
 - (B) is traded at a market price of less than \$1,000.
 - (C) price is not affected by the change in market yield, and will continue to trade at \$1,000.
9. Assume a city issues a \$5 million bond to build a hockey rink. The bond pays 8% semiannual interest and will mature in 10 years. Current interest rates are 6%. What is the present value of this bond?
- (A) \$ 5,743,874.
 - (B) \$ 5,000,000.
 - (C) \$ 3,363,478.
10. For an option-free bond, as the yield to maturity increases, the bond price:
- (A) decreases at a decreasing rate.
 - (B) decreases at an increasing rate.
 - (C) increases at a decreasing rate.
11. Four years ago, Gamma Corporation issued a 20-year bond carrying an annualized coupon of 6% to expand its existing operations. The coupon is paid on a semiannual basis, and the bond is currently yielding 5.8%. The price of the bond per \$100 of principal is closest to:
- (A) \$102.
 - (B) \$106.
 - (C) \$104.
12. A coupon bond that pays interest annually has a par value of \$1,000, matures in 5 years, and has a yield to maturity of 10%. What is the value of the bond today if the coupon rate is 12%?
- (A) \$1,077.22.
 - (B) \$1,075.82.
 - (C) \$ 927.90.

13. Consider a 6-year \$1,000 par bond priced at \$1,011. The coupon rate is 7.5% paid semiannually. Six-year bonds with comparable credit quality have a yield to maturity (YTM) of 6%. Should an investor purchase this bond?
- (A) No, the bond is overvalued by \$ 64.
 - (B) Yes, the bond is undervalued by \$ 38.
 - (C) Yes, the bond is undervalued by \$ 64.
14. Matrix pricing is used primarily for pricing bonds that:
- (A) differ from their benchmark bond's credit rating.
 - (B) differ from their benchmark bond's maturity.
 - (C) have low liquidity.
15. An investor buys a 25-year, 10% annual pay bond for \$900 and will sell the bond in 5 years when he estimates its yield will be 9%. The price for which the investor expects to sell this bond is closest to:
- (A) \$ 964.
 - (B) \$1,091.
 - (C) \$1,122.
16. An analyst using matrix pricing will estimate the value of a bond based on:
- (A) the issuer's cost of capital from all sources.
 - (B) yields to maturity of other bonds.
 - (C) a probability model for default risk.
17. To determine the full price of a corporate bond, a dealer is most likely to calculate accrued interest based on:
- (A) 30-day months and 360-day years.
 - (B) 30-day months and 365-day years.
 - (C) Actual day counts.
18. What is the value of a 10-year, semi-annual, 8% coupon bond with a \$1,000 face value if similar bonds are now yielding 10%?
- (A) \$ 875.38.
 - (B) \$ 877.11.
 - (C) \$1,135.90.
19. Given a required yield to maturity of 6%, what is the intrinsic value of a semi-annual pay coupon bond with an 8% coupon and 15 years remaining until maturity?
- (A) \$1,095.
 - (B) \$1,196.
 - (C) \$1,202.

20. Interest rates have fallen over the seven years since a \$1,000 par, 10-year bond was issued with a coupon of 7%. What is the present value of this bond if the required rate of return is currently four and one-half percent? (For simplicity, assume annual payments.)
- (A) \$1,052.17.
(B) \$ 1,068.72.
(C) \$1,044.33.
21. A bond offers a 12% coupon paid semiannually and has 15 years left to maturity. Assuming a par value of \$1,000 and a yield to maturity of 16%, the price of the bond is closest to:
- (A) \$ 775.
(B) \$ 777.
(C) \$ 776.
22. What is the probable change in price of a 30-year semiannual 6.5% coupon, \$1000 par value bond yielding 8% if the yield decreases to 7%?
- (A) \$ 106.34.
(B) \$ 107.31.
(C) \$ 98.83.
23. A zero-coupon bond matures three years from today, has a par value of \$1,000 and a yield to maturity of 8.5% (assuming semi-annual compounding). What is the current value of this issue?
- (A) \$ 779.01.
(B) \$ 78.29.
(C) \$ 782.91.
24. A 10-year, 5% bond is issued at a price to yield 5.2%. Three months after issuance, the yield on this bond has decreased by 100 basis points. The price of this bond at issuance and three months later is:
- (A) below par at issuance, but above par three months later.
(B) above par at issuance, but below par three months later.
(C) below par at issuance, and below par three months later.

25. Ron Logan, CFA, is a bond manager. He purchased \$50 million in 6.0% coupon Southwest Manufacturing bonds at par three years ago. Today, the bonds are priced to yield 6.85%. The bonds mature in nine years. The Southwest bonds are trading at a:
- (A) discount, and the yield to maturity has decreased since purchase.
 - (B) premium, and the yield to maturity has decreased since purchase.
 - (C) discount, and the yield to maturity has increased since purchase.
26. Parsons Inc. is issuing an annual-pay bond that will pay no coupon for the first five years and then pay a 10% coupon for the remaining five years to maturity. The 10% coupon interest for the first five years will all be paid (without additional interest) at maturity. If the annual YTM on this bond is 10%, the price of the bond per \$1,000 of face value is closest to:
- (A) \$ 856.
 - (B) \$ 778.
 - (C) \$ 814.
27. Which of the following statements regarding zero-coupon bonds[®] and spot interest rates is most accurate?
- (A) Price appreciation creates only some of the zero-coupon bond's return.
 - (B) A coupon bond can be viewed as a collection of zero-coupon bonds.
 - (C) Spot interest rates will never vary across time.
28. Consider a 10-year, 6% coupon, \$1,000 par value bond, paying annual coupons, with a 10% yield to maturity. The change in the bond price resulting from a 400 basis point increase in yield is closest to:
- (A) \$ 170.
 - (B) \$ 480.
 - (C) \$ 1,160.
29. An investor buys a 20-year, 10% semi-annual bond for \$900. She wants to sell the bond in 6 years when she estimates yields will be 10%. What is the estimate of the future price?
- (A) \$ 946.
 - (B) \$1,000.
 - (C) \$1,079.

30. An investor gathered the following information about two 7% annual-pay, option-free bonds:
- Bond R has 4 years to maturity and is priced to yield 6%
 - Bond S has 7 years to maturity and is priced to yield 6%
 - Both bonds have a par value of \$1,000.
- Given a 50 basis point parallel upward shift in interest rates, what is the value of the two bond portfolio?
- (A) \$ 2,086.
(B) \$ 2,030.
(C) \$ 2,044.
31. Consider a \$1,000-face value, 12-year, 8%, semiannual coupon bond with a YTM of 10.45%. The change in value for a decrease in yield of 38 basis points is:
- (A) \$ 21.18.
(B) \$ 22.76.
(C) \$ 23.06.
32. Consider a bond that pays an annual coupon of 5% and that has three years remaining until maturity. Assume the term structure of interest rates is flat at 6%. If the term structure of interest rates does not change over the next twelve-month interval, the bond's price change (as a percentage of par) will be closest to:
- (A) 0.00.
(B) -0.84.
(C) 0.84.
33. An investor purchased a 6-year annual interest coupon bond one year ago. The coupon rate of interest was 10% and par value was \$1,000. At the time she purchased the bond, the yield to maturity was 8%. The amount paid for this bond one year ago was:
- (A) \$1,092.46.
(B) \$1,125.53.
(C) \$1,198.07.
34. A 5-year bond with a 10% coupon has a present yield to maturity of 8%. If interest rates remain constant one year from now, the price of the bond will be:
- (A) higher.
(B) lower.
(C) the same.

35. Assume a city issues a \$5 million bond to build a new arena. The bond pays 8% semiannual interest and will mature in 10 years. Current interest rates are 9%. What is the present value of this bond and what will the bond's value be in seven years from today if the yield is unchanged?

Present Value Value in 7 Years from Today

- | | | |
|-----|-----------|-----------|
| (A) | 4,674,802 | 4,871,053 |
| (B) | 4,674,802 | 4,931,276 |
| (C) | 5,339,758 | 4,871,053 |
36. Austin Traynor is considering buying a \$1,000 face value, semi-annual coupon bond with a quoted price of 104.75 and accrued interest since the last coupon of \$33.50. Ignoring transaction costs, how much will the seller receive at the settlement date?
- (A) \$1,014.00.
(B) \$1,047.50.
(C) \$1,081.00.
37. A bond has a yield to maturity of 7% with a periodicity of 4. The bond has a face value of \$100,000 and matures in 13 years. Each coupon payment will be \$1,800. The current price of the bond is closest to:
- (A) \$101,672.
(B) \$101,698.
(C) \$102,768.
38. If yields do not change over the life of a zero-coupon bond, its price will least likely:
- (A) approach par value.
(B) follow the bond's constant-yield price trajectory.
(C) remain constant.
39. Georgia Corporation has \$1,000 par value bonds with 10 years remaining maturity. The bonds carry a 7.5% coupon that is paid semi-annually. If the current yield to maturity on similar bonds is 8.2%, what is the current value of the bonds?
- (A) \$ 569.52.
(B) \$ 952.85.
(C) \$ 1,123.89.
40. A new-issue, 15-year, \$1,000 face value 6.75% semi-annual coupon bond is priced at \$1,075. Which of the following describes the bond and the relationship of the bond's market yield to the coupon?
- (A) Premium bond, required market yield is greater than 6.75%.
(B) Premium bond, required market yield is less than 6.75%.
(C) Discount bond, required market yield is greater than 6.75%.

41. The value of a 10 year zero-coupon bond with a par value of \$1,000, yielding 9.6% on a semiannual-bond basis, is closest to:
- (A) \$ 410.
 - (B) \$ 400.
 - (C) \$ 390.
42. Today an investor purchases a \$1,000 face value, 10%, 20-year, semi-annual bond at a discount for \$900. He wants to sell the bond in 6 years when he estimates the yields will be 9%. What is the estimate of the future price?
- (A) \$ 946.
 - (B) \$ 1,079.
 - (C) \$ 1,152.
43. A 7% callable semiannual-pay bond with a \$1,000 face value has 20 years to maturity. If the yield to maturity is 8.25% and the yield to call is 9.25% the value of the bond is closest to:
- (A) \$797.
 - (B) \$836.
 - (C) \$879.
44. For a bond trading at a discount, the current yield will most likely be:
- (A) higher than the yield to maturity.
 - (B) lower than the yield to maturity.
 - (C) the same as the yield to maturity.
45. In the context of bonds, accrued interest:
- (A) covers the part of the next coupon payment not earned by seller.
 - (B) equals interest earned from the previous coupon to the sale date.
 - (C) is discounted along with other cash flows to arrive at the dirty, or full price.
46. An investor plans to buy a 10-year, \$1,000 par value, 8% semiannual coupon bond. If the yield to maturity of the bond is 9%, the bond's value is:
- (A) \$1,067.95.
 - (B) \$934.96.
 - (C) \$935.82.

47. Consider a 10%, 10-year bond sold to yield 8%. If after one year the bond has followed its constant yield price trajectory, its price will most likely have:
- (A) increased.
 - (B) decreased.
 - (C) remained constant.
48. An investor purchases a \$1,000 5% coupon bond with quarterly coupon payments that matures in 12 years and has a yield to maturity of 7.0%. The price the investor pays is closest to:
- (A) \$ 838.53.
 - (B) \$ 839.42.
 - (C) \$ 841.15.
49. Consider a 10%, 10-year bond sold to yield 8%. One year passes and interest rates remained unchanged (8%). If after one year the bond has followed its constant yield price trajectory, its price will most likely have:
- (A) remained constant.
 - (B) increased.
 - (C) decreased.
50. A \$1,000 par, semiannual-pay bond is trading for 89.14, has a coupon rate of 8.75%, and accrued interest of \$43.72. The flat price of the bond is:
- (A) \$ 847.69.
 - (B) \$ 891.40.
 - (C) \$ 935.12

