Fixed Income Sectional Test 1 (90 minutes)

1. Michael is planning to invest in a fixed income security and also, he will hold the bond until maturity. He is expecting the interest rates to rise in the future. Which of the following bonds should be chosen by him to maximize his realized rate of return over the life of the bond? Assume that all the bonds have the same maturity and the interim cash flows are reinvested till maturity.
   a) Zero-coupon bond
   b) Inverse floater bond
   c) Bond with 6 percent annual coupon

2. A 8 percent annual coupon paying corporate bond has a yield to maturity of 8 percent. The bond has a maturity of 5 years. Four months have passed since the last coupon payment. What is the most likely value of the full price of the bond? Assume the par value to be $100.
   a) $102.67
   b) $102.60
   c) $100.00

3. An analyst is doing a valuation of an illiquid six-year, 5 percent annual coupon payment corporate bond. The details about the two other corporate bonds with the similar credit quality are given below:
   Bond A: 4-year, 5 percent annual coupon payment bond priced at 98.40 per 100 of par value
   Bond B: 7-year, 6 percent annual coupon payment bond price at 99.50 per 100 of par value
   What is the estimated price of the illiquid bond per 100 of par value using matrix pricing?
   a) 95.66
   b) 96.17
   c) 99.13

4. A three-year, 10.00 percent semiannual coupon payment bond is priced at 102.40 per 100 of par value. What is the annual rate that can be used for direct comparison with an otherwise comparable bond that makes quarterly coupon payments for the bond?
   a) 9.068 percent
   b) 9.077 percent
   c) 9.479 percent

5. The tax rate on the interest payment for a bond has decreased from 25 percent to 20 percent. What is the most likely impact on the market price of the bond?
   a) Increase
   b) Decrease
   c) No change

6. The discount margin for a floating-rate note is 158 basis points. The bond is quarterly coupon paying bond with 5 years to maturity. The bond is paying LIBOR plus 1.20 percent. The three-month LIBOR is constant at 2.25 percent. Assuming the 30/360 day-count convention and evenly spaced periods, calculate the price of the note per 100 of par value.
   a) 98.04
   b) 98.28
   c) 101.74

7. The bond equivalent yield for an 180-day banker's acceptance for a 360-day year is 4.42 percent. The bond is quoted in the market based on a discount rate basis. What is the price of the banker's acceptance in the market per 100 of par value?
   a) 97.79

b) 97.82
c) 97.87

8. A bank certificate of deposit is trading at $98,000. It is going to mature in 300 days and will provide $100,000 at the maturity. The bond equivalent yield for the certificate of deposit is closest to:
a) 2.43 percent
b) 2.45 percent
c) 2.48 percent

9. The spot rates for 1-year, 2-year and 3-year periods are 4.5 percent, 4.7 percent, and 5.0 percent. What is the value of a zero coupon paying bond per 100 of par value assuming annual periodicity with three years of maturity?
a) 86.38
b) 87.05
c) 87.63

10. The par rate is defined as the coupon rate for which the bond will trade at par. For an upward sloping yield curve, the par rate of a bond will be:
a) Greater than the yield-to-maturity
b) Equal to the yield-to-maturity
c) Lesser than the yield-to-maturity

11. The data for the Indian government bond and Indian corporate bond is given in the table below. Both bonds pay interest annually. The current five-year swap rate is 8.58 percent. What is the interpolated spread for the corporate bond?

Bond	Coupon Rate	Time-to-Maturity	Price
Indian Government Benchmark Bond	7.5 percent	5 years	99.56
Indian Corporate Bond	9.2 percent	5 years	101.45

a) 0.25 percent
b) 0.97 percent
c) 1.22 percent

12. The z-spread for a callable bond with a strike price of 102 is 235 basis points. What is the most likely value of z-spread for the same bond with the call strike price of 101?
a) 230 basis points
b) 235 basis points
c) 240 basis points

13. A five-year, 6 percent, quarterly paying coupon corporate bond is trading at 101.28 per 100 of par value. The government bond with the same periodicity and maturity is yielding 4.50 percent to maturity. The yield curve is upward sloping. What is the most likely value of the z-spread for the corporate bond?
a) 1.18 percent
b) 1.20 percent
c) 1.22 percent

14. The spot rate for 1-year is 3.2 percent. The 1-year forward rate 1-year from now is 3.4 percent. The 2-year

forward rate 1 year from now is 3.5 percent. What is the value of a zero coupon paying bond per 100 of par value with three years to maturity assuming annual periodicity?

a) 90.46

b) 90.54

c) 90.63

15. In which of the following kinds of bonds, the currency for the coupons and the principal amount is fixed at the issuance of the bond?

a) Dual-currency bonds

b) Currency option bonds

c) Both of the above

16. A floating rate note pays LIBOR plus 2.5 percent coupon on a semi-annual basis. The coupons are paid at the end of June and at the end of December. The 6-month LIBOR on 1st July 2015 was 3.5 percent and the 6-month LIBOR on 1st January 2016 was 3.6 percent. How much coupon amount was paid by the bond on 31st December 2015 assuming the par value to be 100?

a) 3.00

b) 3.05

c) 6.00

17. Which of the following is the source of repayment proceeds for the asset-backed securities?

a) Issuer's ability to generate cash flows

b) Cash flows generated by one or more underlying financial assets

c) Cash flows of the project the bond issue is financing

18. Which of the following bondholders have a general claim on the issuer's assets and cash flows?

a) Secured bonds

b) Unsecured bonds

c) Both secured and unsecured bonds

19. Which of the following statements is least accurate about the covered bonds?

a) Covered bonds provide more protection to the bondholders as compared to the asset-backed securities

b) If the assets in the cover pool become non-performing then the issuer must replace them with performing assets

c) Covered bonds usually offer higher yields than otherwise similar asset-backed securities

20. Which of the following form of credit enhancement tools is least likely to expose the investor to third-party (counterparty) risk?

a) Bank guarantee

b) Surety bonds

c) Cash collateral account

21. Who appoints the financial institution for the role of trustee for a bond issue?

a) Issuer

b) Investors

c) Regulatory authority

22. Euroyen bonds are most likely to be denominated in:
  a) US dollars
  b) Euro
  c) Japanese Yen

23. Which of the following factors is most likely to have the strongest effect on the price of a bond?
  a) The frequency of coupon payments
  b) The currency in which the bond is denominated
  c) The place where the bond is issued or traded

24. A company issues a zero-coupon bond in a country where there is an original discount tax provision in the tax code. The bond has a par value of 1,000 and is issued for 850. The duration of the bond is five years. An investor who buys the zero-coupon bond at issuance and holds it until maturity most likely:
  a) Pay tax on the taxable income of 30 every year on the bond and no capital gain tax at maturity
  b) Does not have to pay tax every year and need to pay capital gain tax on 150 at maturity
  c) Pay tax on the taxable income of 30 every year on the bond and capital gain tax on 150 at maturity

25. Which of the following bonds is most likely to have the highest amount of coupon payment during its tenor?
  a) Normal coupon paying bullet bond
  b) Fully amortized bond
  c) Partially amortized bond

26. Which of the following kind of bonds is most likely to have the highest interest rate risk?
  a) Floating-rate note
  b) Inverse floating rate note
  c) Deferred coupon bond

27. Which of the following inflation-linked bonds provides the least protection from inflation?
  a) Interest-indexed bonds
  b) Capital-indexed bonds
  c) Indexed-annuity bonds

28. What will be the most likely impact of an increase in underlying share price on the price of the convertible bond?
  a) Increase in price
  b) No impact
  c) Decrease in price

29. Which of the following statements is least accurate about the contingent convertible bonds?
  a) These bonds are helpful in reducing the risk of default
  b) The convertible option in the contingent convertible bonds is at the discretion of the investor
  c) The contingent write-down provisions are convertible on the downside

30. The government of India owns Life Insurance Corporate (LIC), an insurance company. The bond issued by the LIC is most likely classified as:

a) Sovereign government bond
b) Non-sovereign government bond
c) Quasi-government bond

31. A floating rate bond was issued on 1st January 2015. The bond is going to mature on 31st December 2020. The coupon payment is LIBOR + a spread of 120 basis points. The coupons are paid on the semi-annual basis. Due to the fall in the issuer's credit quality, the spread increases to 150 points on 1 August 2015. What will be its impact on the coupon payments and bond price?
a) Increase in coupon payment and decrease in bond price
b) Increase in coupon payment and no change in bond price
c) No change in coupon payment and decrease in bond price

32. What is the most likely impact of an increase in the proportion of non-competitive bids for a single-price bond auction on the final issue price of the bond?
a) Increase
b) No impact
c) Decrease

33. Which of the following statements is least accurate about the sovereign bonds?
a) The latest sovereign bond issue for a given maturity is referred to as a benchmark issue
b) The credit rating for sovereign bond issued in local currency is generally higher than the credit rating for the sovereign bond issued in foreign currency
c) The sovereign bonds where the cash flows payments are linked to a consumer price index eliminates the effect of inflation completely

34. Which of the following bond structures is most likely to carry more credit risk?
a) Term maturity structure
b) Serial maturity structure
c) Sinking fund arrangement on a serial maturity structure

35. KEC Inc. has $200 million of receivables on its balance sheet that it has to receive from its customers. It securitizes the receivables by selling it to a trust, a special purpose entity. The trust then issues ABS, backed by the pool of receivables, with the following structure:

Bond Class	Par Value ($ millions)
A (senior)	160
B (subordinated)	20
C (subordinated)	20
Total	200

What will be the impact on the ABS if KEC Inc. files for the bankruptcy?
a) No impact
b) Bond classes A, B, and C will lose their entire par value
c) Losses will be realized by Bond Class C first, then by Bond Class B, and then by Bond Class A

36. If one of the customers default on the receivables worth $60 million for the data given in the previous question then:
   a) All bonds will suffer the same amount of loss
   b) Bond C will have the maximum loss followed by Bond B and Bond A respectively
   c) Bond A will have the maximum loss followed by Bond B and Bond C respectively

37. Which of the following mortgage structures is most likely to have the lowest prepayment risk?
   a) Amortizing mortgages with early prepayment option
   b) Amortizing mortgages without early prepayment option
   c) Interest only lifetime mortgages

38. A bank advertises a mortgage with the following interest rate: 5 percent for first two years and 5.5 percent thereafter. The mortgage is most likely a:
   a) Convertible mortgage
   b) Rollover mortgage
   c) Hybrid mortgage

39. A pool of mortgages includes three mortgages with the following characteristics:

Mortgage	Outstanding Mortgage Balance (US $)	Coupon Rate (%)	Number of Months to Maturity
1	5,000	6.5	44
2	7,000	6.2	56
3	8,000	6.7	68

What is the weighted average maturity of the mortgage pool?
   a) 56.0 months
   b) 57.8 months
   c) 59.4 months

40. What is the most likely impact of the increase in interest rates on the contraction and extension risk of the mortgage-backed securities?
   a) Decrease in contraction risk and increase in extension risk
   b) Increase in contraction risk and decrease in extension risk
   c) Increase in both contraction and extension risk

41. A collateralized mortgage obligation (CMO)has the following structure with sequential PAC tranches and one support tranche:

Tranche	Par Amount (US$ million)
PAC-A	250
PAC-B	150
PAC-C	80
Support	120
Total	600

Which of the following tranches will have the maximum extension risk?

a) PAC-A tranche
b) PAC-C tranche
c) Support tranche

42. The probability of default and the expected loss for three bonds are given below:

Bonds	Probability of default	Expected loss
Bond A	0.10	0.040
Bond B	0.12	0.042
Bond C	0.15	0.038

Which of the following bonds is most likely to have the highest credit risk?
a) Bond A
b) Bond B
c) Bond C

43. Which of the following bonds is most likely to have the lowest seniority ranking among the given bonds?
a) Senior subordinated
b) Second lien loan
c) Senior unsecured

44. Which of the following companies is most likely to have lower recovery rates?
a) Companies that go bankrupt in industries that are in secular decline
b) Companies that go bankrupt in industries that are in cyclical economic downturn
c) Both will have the similar recovery rates

45. Which of the following credit ratings is most likely to have the credit protection for the investor as per Moody's?
a) Ba1
b) Baa2
c) Ba3

46. Which of the following statements is least accurate about the credit ratings?
a) Credit ratings are the leading indicators of the credit risk in the bonds
b) Credit ratings are the coincident indicators of the credit risk in the bonds
c) Credit ratings are the lagging indicators of the credit risk in the bonds

47. Which component of the credit analysis is studied using industry analysis?
a) Collateral
b) Capacity
c) Covenants

48. The cash flows for a company during a year is given in the table below (all figures are in million dollars):

Cash flow from operating activities	193.5
Additions to property and equipment	(72.5)
Additions to product rights and other intangibles	(15.8)
Additions to marketable securities	(4.3)
Proceeds from sale of property and equipment	24.8
Cash flow from financing activities	54.9

What is the FCF after dividends for the company if it paid a dividend of $3.5 million during the year?

a) $101.7 million
b) $122.2 million
c) $126.5 million

49. A buy-and-hold investor purchases a 5-year, 9 percent annual coupon payment bond for 98.94 per 100 of par value. Just after purchasing the bond, the interest rates go up to 11.30 percent and remains the same till the maturity of the bond. The coupons are reinvested at 11.30 percent. What is the total return realized by the investor on an annual basis?

a) 9.27 percent
b) 9.36 percent
c) 9.59 percent

50. You buy a 20-year, 8 percent annual coupon payment bond for 104.58 per 100 of par value. Soon after buying the bond, the interest rate changes to 7.2 percent and coupon are reinvested at that rate. What will be the horizon yield on an annual basis earned by you if you hold the bond for two years?

a) 8.86 percent
b) 9.11 percent
c) 11.58 percent

51. Which of the following statements is most accurate about the Macaulay duration of a coupon paying bond assuming that the yield-to-maturity is constant?

a) The Macaulay duration of the bond declines smoothly as the time passes during the coupon period and then jumps downward just after the coupon is paid
b) The Macaulay duration of the bond declines smoothly as the time passes during the coupon period and remain unchanged just after the coupon is paid
c) The Macaulay duration of the bond declines smoothly as the time passes during the coupon period and then jumps upward just after the coupon is paid

52. What is the approximate value of the Macaulay duration for a non-callable perpetuity that pays an annual coupon of 8 percent trading at par?

a) 11.5
b) 13.5
c) Infinity

53. Which of the following statements is least accurate about the Macaulay duration?

a) The Macaulay duration of a zero coupon bond has a slope of 1 with respect to the time-to-maturity
b) The Macaulay duration of a premium bond is lesser than that of a discount bond all else things equal

c) The Macaulay duration for a long-term discount bond always increases with an increase in the years to maturity

54. Which of the following bonds is more likely to be trading at a higher price? Assume that all other things such as risks related to the bonds are equal for the bond except the convexity/concavity.
a) Bond with a convexity of 840
b) Bond with a convexity of 428
c) Bond with a concavity of 102

55. The Macaulay duration of 15-year annual coupon payment bond is 10.45 years. An investor buys this bond for a holding period of 12 years. The investor will be more concerned about the:
a) Reinvestment risk
b) Market price risk
c) Both risks will offset each other

56. The price of a fixed-rate corporate bond falls from 95.45 to 93.75 per 100 of par value one day because of an unexpected rating downgrade of the issuer. The annual modified duration of the bond is 6.45. What is the approximate change in the credit spread on the corporate bond, assuming benchmark yields curve had a parallel upward shift of 2 basis points that day?
a) 25.61 basis points
b) 27.61 basis points
c) 28.11 basis points

57. Which of the following bonds is most likely to have the highest effective duration assuming everything else constant apart from optionality of the bond?
a) Option-free bond
b) Callable bond
c) Putable bond

58. What is the approximate convexity of a zero-coupon bond with an annual periodicity that is yielding 8.5 percent and has 5 years left to maturity? The bond had a maturity of 10 years at the initiation.
a) 21.02
b) 25.48
c) 84.73

59. What is the most likely impact on an increase in the yield volatility on the price of a callable bond?
a) Increase
b) No impact
c) Decrease

60. Which of the following statements is most likely to be accurate about the embedded options in bonds?
a) The duration of callable bond increases and the duration of putable bond decreases with an increase in interest rate
b) The duration of callable bond decreases and the duration of putable bond increases with an increase in interest rate
c) The duration of both callable bond and putable bond increases with an increase in interest rate