

**ANSWERS:****WINDSOR LEVEL 1 SAMPLE EXAM**

1. D
2. A. To comply with Standard II(C), Olson should have gotten the authorization from Wright to copy the spreadsheets. The prohibition against plagiarism requires that Olson identify Wright as the source of the initial model. However, the Standard permits publishing factual information from Moody's Investors Service without acknowledgment because Moody's is recognized as a source of factual materials.
3. D Both violated Standard II(B) because they commit an act that compromised the validity of the examinations leading to the award of the right to use the CFA designation.
4. D
5. A
6. B
7. B
8. D 4A3
9. B IV(A.3), Independence and Objectivity limits gifts to US\$100. Give the watch back.
10. C The problem is with the word "will." Barb should have used "is estimated to be"
11. B Standard IV.B.2.d requires members to disclose "general principles and investment processes" to clients and to "promptly disclose to clients and prospects any changes that might significantly affect those processes." Under the Standard, Midland management is required either to:
  - rebalance the portfolio in a timely manner so as to maintain compliance with the investment policy or
  - communicate an intended change in that policy well in advance of the actual change so as to afford investors time to act prior to the change in investment policy taking place.Midland is in violation of the Standard.
12. D IV(B.4): Priority of Transactions. If an analyst decides to make a recommendation about the purchase or sale of a security, she shall give her customers or employer adequate opportunity to act on this recommendation before acting on her own behalf.
13. D 4B6
14. D IV(B.7): Disclosure of Conflicts to clients. The analyst shall disclose to his/her customers any material conflict of interest and any material beneficial ownership of securities that could reasonably be expected to impair his/her ability to render unbiased advice.
15. A
16. D V-A
17. B V
18. B PPS
19. D This is an annuity due problem.
  - ◆ PV of first \$1,000 = \$1,000
  - ◆ PV of next 9 payments at 8% = 6,247.
  - ◆ Sum of payments = \$7,247.
  - ◆ Or put your calculator in BGN mode.
  - ◆ N=10, i=8, PMT=1000 compute PV = 7,247
  - ◆ Don't forget to take your calculator out of BGN mode.

20.	C	i	n	FV	compute FV
		10	3	500	665.50
		10	2	500	605.00
		10	1	-200	-220.00
		10	0	500	500.00
					1550.50

21. C

22. A

23. A

25	5	125
35	20	700
45	30	1350
55	10	550
<hr/>		
sum 2725 / 65 = 41.9		

Median is in the middle class.

$$\text{Median} = L + \left[ \frac{n/2 - \text{cumulative frequency}}{f} \right](i)$$

$$\text{Median} = 40 + \left[ \frac{65/2 - 25}{30} \right](10) = 42.5$$

This part can be worked with common sense.

24. B

$$R1 = -10/100 = -10\%$$

$$R2 = +9/90 = +10\%$$

$$AM = (-10 + 10)/2 = 0\%$$

$$GM = [\sqrt{(99/100)}] - 1 = -.005$$

$$GM = [\sqrt{(.9)(1.1)}] - 1 = -.005$$

25. C

Range equals largest – smallest.  $55 - 15 = 40$

$$\text{Mean} = 35 \text{ so absolute deviation} = (10+20+10+20)/5 = 12$$

$$\text{Variance} = (10^2 + 20^2 + 10^2 + 20^2) / 5 = 1000/5 = 200$$

If this were a sample the range and deviation would be the same but the variance would be divided by 4 rather than 5.

26. B

$$CV = (\sigma/\text{mean})(100)$$

$$\sigma = \sqrt{((5^2+5^2)/3)} = \sqrt{16.67} = 4 \text{ plus a bit}$$

$$(4/10)(100) = 40\%$$

27. A

28. C

Since one standard deviation equals 3 the question is asking what is the area under the normal curve from -1 standard deviations to the mean and everything above that point. 1/2 of the curve above the mean equals 50% and 1 standard deviation below the mean equals 34% therefore  $34 + 50 = 84\%$  or .84.

29. C

$$.083 = (25/60)(60/300) \text{ or } 25/300$$

30. A

31. D

I. 68% of all observations fall within +/- one standard deviation of the mean of a normal distribution. You are given a mean of 15 and want to know what the probability is of having an actual observation falling within one standard deviation, which is 68%.

II. The probability of over 35 is what's above 47.5%.

III. The probability of less than 5 is what's below 34%.

IV. The probability of getting more than 5% is  $34\% + 50\%$ .

32. C

33. B

Take the average of the two 4-period moving averages for periods 1 through 4 and 2 through 5. The 4-period centered moving average =  $(19 + 21.5) = 20.25$

34. D

Perfect correlation means that the observations fall on the regression line. + means the line is going up line and – means it is pointed down. An  $R^2$  of 100%, means perfect

correlation. When there is no correlation, the regression line is flat and the residual standard error equals the standard deviation of Y.

35. D
36. B  $Y = \alpha + \beta X \rightarrow Y = 2.5 + 1.2(10) = 45$
37. B (demand deposits)(reserve requirements) = required reserves  
 $(300)(.1) = 30$  the required reserves  
Actual reserves - required reserves = excess reserves  
 $35 - 30 = 5$  This is what the bank can lend out.
38. D  $MV = PY$  At full employment, output (Y) is considered to be constant, so if M increases the only thing that can happen is an increase in P. Note: V is assumed to be constant.
39. C
40. D
41. C Price elasticity = (% change in quantity)/(% change in price) =  $(20/60)/(5/25) = 1.65$
42. D
43. B
44. D Since P does not equal MR=MC, the output level is inefficient.
45. B Free entry and exit implies zero profits in the long run.
46. A
47. B Country A gives up 1 bread to produce 2 milks. Country B gives up 1 bread to produce 1.5 milks. Country A should make milk and Country B should make bread.
48. A With inflation, consumers will have higher nominal expenditures including those on foreign goods. They will bid for foreign currencies, driving up their prices relative to the value of the domestic currency causing it to depreciate.
49. D The direct quote in Germany will be DM/£. To obtain the DM/£ quote, simply divide the \$/£ quote by the \$/DM quote to get the DM/£ quote of 2.704, i.e.,  $1.2312/.4552$ .
50. C The domestic interest rate is low relative to the hedged foreign rate. Hence, borrow domestic and lend foreign.
51. B
52. C c should be interest expense **increases**.
53. D Operating leases have no impact on the balance sheet.  
BUT: Capital leases have 3 balance sheet impacts.  
1. Fixed assets increase.  
2. Long Term Debt increases.  
3. Short Term Debt increases by the current principal payment to be made on the debt.  
So: The CR will fall since CL has increased.  
D/E will rise since debt increased while Equity remained constant.
54. C Note use liquidation value of preferred not par value.  
 $BV = [\text{Equity} - \text{Preferred Equity} + \text{earnings} - \text{Preferred Dividend}] / \# \text{ common shares}$   
 $BV = [310000 - 150000 - 110,000 + \text{no earnings given} - 10,000] / 1000 = 40$
55. A The indirect method begins with net income, which has already subtracted all cash and non-cash expenses. Depreciation must be added back to determine cash flow, because it is a non-cash expense. Therefore, under the indirect method, depreciation must be added to net income, because it is a non-cash expense.
56. A 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 rise over time.
57. D
58. B

59. C Sold 950 units; COSTS 600 @ 16 = 9,600  

$$\frac{350 @ 15 = 5,250}{\text{COGS } 14,850}$$
60. D  $CR = CA / CL$  LIFO firms will have lower reported inventory levels, thus CA will be lower. Lower CA means that the CR will be lower.
61. B
62. B  $COGS_{FIFO} = COGS_{LIFO} - (\text{End LIFO reserve} - \text{Beginning LIFO reserve})$   
 $COGS_{FIFO} = 30,000 - (13,500 - 10,000) = 26,500.$   
 If COGS falls by \$3,500 then EBT must rise by \$3,500.
63. D
64. C The Debt/equity ratio will rise. The interest coverage ratio EBIT/ I will fall.
65. B  $\$30 + 10 = \$40$  million. Use the change in gross plant and equipment as your estimate for capital expenditures.
66. B There are no dilutive securities. Common dividends are not considered in EPS.  $(\$300,000 - \$100,000)/100,000$ . There are \$100,000 in preferred dividends and 100,000 weighted average shares outstanding after consideration of the share repurchase at mid-year.
67. D  $100,000(12) = 1,200,000$   
 $10,000(12) = 120,000$   
 $20,000(9) = (120,000)$  wt ave shares  
 $1,200,000 / 12 = 100,000$   
 Treasury stock method:  
 $10000 - 10000(30)/(40) = 2500$   
 $\text{Basic EPS} = [150000 - 30000] / 100000 = \$1.20$   
 $\text{Diluted EPS} = [150000 - 30000 + 100000(1-.4)] / [100000 + 55000 + 2500] = \$1.14$
68. B  $BV = \{[RE + CS + PS \text{ at par}] - PS \text{ at liq} - \text{Div in arrears}\} / \# \text{ of common shares}$   
 $BV = [100,000 + 100,000 + 100,000 - 110,000 - 40,000] / 5,000 = \$30$
69. D
70. B Cash interest is only part of the interest expense. The amortization of the bond discount at maturity is charged to Financing Cash Flow when in fact it should be charged against Cash flow from Operations, so CFO will be overstated.
71. D  
 Net Income 1000  
 Depreciation 600  
 $\Delta \text{Acc rec (use)} (500)$   
 $\Delta \text{Inv (source)} 400$   
 $\Delta \text{Acc Pay (source)} 300$   
 $\Delta \text{Wages Pay (use)} (200)$   
 CFO 1600
72. D You may get confused here, extraordinary items are reported below income from continuing operations but above net income. IV This is the wrong one. You must adjust for changes in the working capital accounts: AR, Inv, and AP.
73. B Times interest earned = EBIT / I EBIT = S - COGS - OE = 100 - 65 - 15 = 20  
 Times interest earned = 20 / 5 = 4
74. D Total Asset turnover = Sales/Total Assets Can't use percentages here so use the actual figures.  
 Turnover = 900/700 = 1.29
75. D
76. B PB: Cum (1) 600, (2) 200, (3) 200/300 takes 2/3s year  
 Discounted PB:

- PV1: 364, PV2: 331, PV3: 225, PV4: 205  
 Cum Cash Flow: (1) 636, (2) 305, (3) 80, (4) 80/205 or .4 years  
 NPV:  $(364 + 331 + 225 + 205 = 1125) - 1000 = 125$
77. A  $Q_{BE} = FC / (P - V) \quad Q = 15,000 / (5 - 2) = 5000$
78. C  $N=20, FV=1000, PV=894, PMT=60, \text{ compute } i = 7\% \rightarrow k_d = (7\%)(1 - .4) = 4.2\%$   
 $k_e = [D1 / (P(1 - FC))] + g \rightarrow k_e = 2/45 + 8 = 12.44$   
 $WACC = (.33)(4.2) + (.67)(12.44) = 9.7\%$
79. C
80. A When firms issue new equity investment projects look poor.
81. C Price weight =  $[(4) + (10)] / 2 = 7$   
 Value weight =  $[(4)(50) + (10)(10)] / [(2)(50) + (10)(10)] = 1.5$
82. A The leverage factor is  $1/\text{initial margin requirement}, 1/0.4 = 2.50$ .
83. B
84. C The evidence is that fundamental analysis does not lead to superior returns using the top-down approach if the analyst uses only past and current information. The analyst's job has to be directed towards doing a superior job of estimating the variables that cause long-run trends in realized returns.
85. C Market efficiency does not assume that market participants correctly adjust prices, just that their price adjustments are unbiased.
86. A 200 shares at a cost of \$100/share is \$20,000 (i.e.,  $200 \times 100$ ).  
 With a 40% initial margin requirement, the cost of the investment would be  $\$20,000 \times 0.4 = \$8,000$ .  
 When the shares are sold, the portfolio is worth \$40,000 ( $\$200 \times 200$ ).  
 Hence, the rate of return would be  $[(40,000/8,000) - 1] \times 100 = 400\%$ .
87. D
88. A Margin must be posted before the trade.
89. C
90. B
91. D
92. D
93. C Dividend payout =  $1 - \text{earnings retention rate} = 1 - .4 = .6$   
 $R_S = R_f + B(R_M - R_f) = .06 + 1.2(.11 - .06) = .12$   
 $g = (\text{retention rate})(ROE) = (.4)(.12) = .048$   
 $P/E = (\text{div payout rate}) / (k - g) = .6 / (.12 - .048) = 8.33$   
 Price =  $(E)(P/E) = (4)(8.33) = 33.32$
94. A  $P_3 = D_4 / (k - g) = 2 / (.12 - .07) = \$40 \rightarrow P_0 = [n = 3; i = 12; FV = 40] = \$31.89$
95. D  $EPS_{\text{index}} = [(\$Sales)(EBDIT \text{ profit margin}) - (\$D) - (\$I)](1 - T)$   
 $EPS_{\text{index}} = [(\$1,000)(.15) - (\$50) - (\$30)](1 - .30) = \$49$   
 Price at end =  $EPS(P/E) = (49)(10) = 490$
96. D  $P/E = (\text{dividend payout ratio}) / (k - g)$   
 $k = \text{real rate} + \text{inflation} = \text{risk premium}$   
 $g = (ROE) (\text{retention rate})$   
 a. ROE up, g up, P/E up; Payout up, P/E up;  
 c. g up, k-g down, P/E up; k up, P/E down
97. A
98. C
99. B Weak form - you can't make excess returns using technical analysis.  
 Semi-Strong form - you can't make excess returns using fundamental analysis, which is the use of public information.  
 Strong Form - you can't make excess returns using non-public information.

100. D When a bond sells at a discount, the market rate goes above the coupon rate and the bond's price falls below par. The current yield is the coupon rate / price, so as price falls below 1000 the current yield rises above the coupon rate. The YTM considers the current yield plus the capital gain associated with the discount.
101. C  
 1. Find the FV of the coupons and interest on interest:  
 $n = 3(2) = 6; i = 12/2 = 6; PMT = 50; \text{ compute FV} = 348.77$   
 2. Determine the value of the bond at the end of 3 years:  $\text{given} = \frac{1,050.00}{1,398.77}$   
 3. Equate FV (1398.77) with PV (1000) over 3 years (n=6); compute  $i = 5.75(2) = 11.5\%$
102. A The bond price change is computed as follows: Bond Price Change =  
 New Price – Old Price =  $(5/1.06 + 105/1.062) - (5/1.06 + 5/1.062 + 105/1.063) = 0.84$ .
103. B  $\Delta P/P = (-)(MD)(\Delta i) + (C)(\Delta i)^2 \rightarrow \Delta P/P = (-)(6)(+.0025) + (62.5)(+.0025)^2 =$   
 $-.015 + .00039 = -.01461$
104. C
105. D  $975 = 50/1.06 + 1050/(1+r)^2$   
 $975 - 47.17 = 1050/(1+r)^2$   
 $(1+r)^2 = 1050/927.83 = 1.1317$   
 $r = (1.1317)^{1/2} - 1$   
 $r = 6.4\%$ , note this rate is on a semi annual basis. If you annualized this rate by doubling it you would get 12.8
106. D  $s_1 r_1 = [(1 + R_6)^6 / (1 + R_5)^5] - 1 = [(1.07)^6 / (1.06)^5] - 1 \rightarrow [1.5 / 1.338] - 1 = .12$
107. C
108. B  $[30000 + (350,000 - 187,500)/10] / [(187500 + 350000) / 2]$
109. B Closed end funds sell for whatever people will pay for them. CE funds typically sell at premiums or discounts from their NAV.
110. D
111. A
112. B In portfolio composition questions return and standard deviation are the key variables. Here you are told that both returns and standard deviations are equal. Thus, you just want to pick the companies with the lowest covariance, because that would mean you picked the ones with the lowest correlation coefficient.  $\sigma_{\text{portfolio}} = [W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \sigma_1 \sigma_2 r_{1,2}]^{1/2}$  where  $\sigma_{\text{Cavanaugh}} = \sigma_{\text{Coe}} = \sigma_{\text{Firm}}$  so you want to pick the lowest covariance which is between Cavanaugh and Firm
113. A Covariance = (standard deviation 1)(standard deviation 2)(correlation coefficient 1,2)  
 Correlation coefficient =  $\text{cov}/(\text{st}^2 d1)(\text{st}^2 d2) = .008/((.1)(.2)) = .4$
114. A  $R_s = R_f + B(R_m - R_f)$   
 $R_s = .05 + 1.2(.12 - .05)$   
 $R_s = .134$  or 13.4%  
 You project Cavanaugh will out perform the market.
115. C
116. D No security can plot above the theoretical CML. All risky securities must be contained within or lie upon the efficient frontier and the CML is tangent to the efficient frontier.
117. C is wrong because it does not specify the fact that risk must also be considered.
118. C
119. C Variance of two-stock portfolio =  $W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \sigma_1 \sigma_2 r_{1,2} =$   
 $[(.7)^2(.2)^2 + (.3)^2(.15)^2 + (2)(.7)(.3)(.2)(.15)(.0032)] = .0217$

120. A      Return =  $(.25)(.05) + (.50)(.10) + (.25)(.05) = .075$   
 Trick, the zero standard deviation causes everything to go to zero.  
 $\sigma_p = \sqrt{w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + w_C^2 \sigma_C^2 + 2w_A w_B \sigma_A \sigma_B \rho_{AB} + 2w_A w_C \sigma_A \sigma_C \rho_{AC} + 2w_C w_B \sigma_C \sigma_B \rho_{CB}}$   
 $\sigma_p = \sqrt{.25^2(0)^2 + .50^2(.05)^2 + .25^2(0)^2 + 2(.25)(.5)(0)(.05)(?) + 2(.25)(.25)(0)(0)(?) + 2(.25)(.5)(0)(.5)(?)}$   
 $\sigma_p = \sqrt{50^2(.05)^2} = 50(.05) = .025$  with risk free assets in the portfolio the only risk is associated with the portion of funds invested in the risky asset.