MOCK EXAM 1 - ANSWERS

Question 1

An investor purchases $1 million of Canadian bonds and is concerned about the bonds defaulting. The investor wishes to transfer this default risk to a third party, so he enters a fixed credit default swap (CDS) spread agreement with First Bank. Assume that the recovery rate is zero, and that there is no accrued interest in the event that Canada defaults. Which of the following statements about the CDS between the investor and First Bank is correct?

A) A paper loss occurs for the investor if the correlation risk between First Bank and Canada increases because the value of the CDS spread will increase.

B) **The fixed CDS spread is valued based on the default probability of the reference asset and the joint default correlation of First Bank and Canada.** ✓

C) The investor has wrong-way risk if there is negative correlation risk between First Bank and Canada.

D) Increasing correlation risk decreases the probability that the worst-case scenario occurs.

Explanation

The fixed CDS spread is valued based on the default probability of the reference asset (Canadian bond) and the joint default correlation of First Bank (counterparty) and Canada. A paper loss occurs for the investor (CDS spread buyer) if the correlation risk between First Bank and Canada increases because the value of the CDS spread will *decrease*. The investor has wrong-way risk if there is *positive* correlation risk between First Bank and Canada. Increasing correlation risk *increases* the probability that the worst-case scenario occurs where both First Bank and Canada default.

(Book 1, Module 8.1, LO 8.a)

Question 2

A financial advisor is educating his client about rating migrations. The client wishes to put money only into investment-grade bonds. Which of the following statements can the advisor make, using S&P's one-year rating migration matrix as a source?

A) Bonds that initially rate investment grade will remain investment grade until they mature.

B) Investment-grade bonds will generally provide a higher yield to investors than non-investment-grade bonds.

C) If the initial rating is investment grade, there is about a 50% chance that its rating after one year will stay the same.

D) **Investment-grade bonds are more likely than non-investment-grade bonds to maintain their initial rating after one year.** ✓

Explanation

Per the S&P's one-year rating migration matrix based on data from 1981 to 2020, there is about a 90% chance that an investment-grade bond (BBB or better) will keep that same rating as after one year; this is higher than non-investment-grade bonds. A bond can certainly go from an investment-grade to a non-investment-grade bond over its life. Even bonds initially issued with the lowest of the investment-grade ratings (BBB) have at least a 91.93% chance of keeping their rating, and even a 3.55% chance of going higher. Investment-grade bonds provide lower yields to investors because they are safer investments.

(Book 2, Module 28.1, LO 28.c)

Question 3

Rigland Bank, Ltd., calculated a business indicator (BI) of €900 million in FY20X5. The chief financial officer (CFO) of the bank, using pro forma financials, forecasts a BI of €1.1 billion in FY20X6. He then examines the various BI buckets in the table below for the purposes of calculating the standardized approach for operational risk.

Bucket	BI Range	BI Component
1	€0 billion–€1 billion	0.12 × BI
2	€1 billion–€30 billion	0.15 × BI
3	€30 billion–+∞	0.18 × BI

Using this information, the change in Rigland's BI component from FY20X5 to FY20X6 will be closest to:

A) **€27 million.** ✓

B) €18 million.

C) €35 million.

D) €200 million.

Explanation

Going from €900 million in FY20X5 to €1.1 billion in FY20X6 will move Rigland Bank from Bucket 1 to Bucket 2 in terms of the BI component calculation. In Bucket 1 (range of €0 billion to €1 billion), the BI component is equal to 0.12 × €900 million, or €108 million. In Bucket 2 (range of €1 billion to €30 billion), the BI component is equal to €120 million + 0.15 × (€1.1 billion − €1 billion), or €135 million. The difference between €108 million and €135 million is equal to €27 million.

(Book 3, Module 65.1, LO 65.a)

Question 4

An investment committee is evaluating two private credit vehicles for a long-term allocation. Vehicle A is a traditional private credit fund (PCF) with a strict 8-year lock-up period. Vehicle B is a business development company (BDC) that is publicly listed and marketed to retail investors with open-end features allowing for earlier redemptions. The committee's risk officer warns that while Vehicle B offers accessibility, its changing investor base introduces a structural vulnerability traditionally associated with commercial banks. If the retail investor base in Vehicle B continues to expand, what specific risk is this vehicle most likely to encounter?

A) Credit risk.

B) Solvency risk.

C) Concentration risk.

D) **Asset–liability mismatch.** ✓

Explanation

Traditional private credit funds (PCFs) are typically closed-end vehicles with long-term capital commitments, which helps limit liquidity pressure and reduces liquidity/maturity transformation risk. In contrast, business development companies (BDCs) often target retail investors by offering more flexible redemption terms that resemble open-end structures. As Vehicle B's retail investor base expands, these redemption-like obligations can behave like short-term liabilities, while the underlying private credit assets remain relatively illiquid. This mismatch between more liquid investor claims and less liquid portfolio assets increases the likelihood of *an asset–liability mismatch*.

(Book 5, Module 102.1, LO 102.a)

Question 5

It is March 1, and the 10-year on-the-run (OTR) Treasury bond is trading at a special rate of 0.80%. The general collateral (GC) rate is 0.95%. A trader is considering lending the bond at the special rate and using the cash to lend out at the higher GC rate. The trader expects the bond to trade at GC rates after July 31 (i.e., in 153 days from today). Given this information, the value of lending $100 of cash is closest to:

A) **$0.0638.** ✓

B) $0.1500.

C) $0.3400.

D) $0.6375.

Explanation

The financing value of the bond depends on the trader's expectation of how long the bond will continue trading at its special rate before the rate moves to the higher GC rate. The trader expects the bond to trade at GC rates past July 31; the financing value of the OTR bond is, therefore, the value over 153 days (from March 1 to July 31). The value of $100 cash at the special spread (the difference between the GC rate and the special rate) of 0.15% (= 0.95% − 0.80%) is therefore:

$$\$100 \times \frac{153 \times 0.15\%}{360} = \$0.06375 \text{ or } 6.38 \text{ cents}$$

(Book 4, Module 78.2, LO 78.g)

Question 6

The VaR percentages (i.e., risk percentages) at the 95% confidence level for bonds with maturities ranging from one year to five years are as follows:

Maturity	VaR %
1	0.4696
2	0.9868
3	1.4841
4	1.9714
5	2.4261

A bond portfolio consists of a $100 million bond maturing in two years and a $100 million bond maturing in four years. The duration of the bond portfolio is 2.8 years. What is the VaR of this bond portfolio using the duration VaR mapping method?

A) $1.484 million.

B) $1.974 million.

C) **$2.769 million.** ✓

D) $2.968 million.

Explanation

The VaR of a 2.8-year maturity zero-coupon bond is interpolated using the 2- and 3-year VaR percentages as follows: 0.9868 + (1.4841 − 0.9868) × (2.8 − 2) = 0.9868 + 0.4973(0.8) = 1.3846. We now have the necessary information to calculate the VaR for this portfolio using the interpolated VaR percentage for a zero-coupon bond with a 2.8-year maturity as follows: duration mapping VaR = $200 million × 1.3846 / 100 = $2.769 million.

(Book 1, Module 5.2, LO 5.d)

Question 7

A credit analyst is reviewing a firm that recently defaulted. The analyst classifies the firm's situation as having "average leverage combined with weak business operations." In this category of distress, the business model is often flawed, leading to significant declines in revenues and margins. Based on the typical outcomes for this specific distress classification, which of the following recovery profiles should the analyst anticipate?

A) Revenue recovery occurs within 3 years.

B) Cash flows stabilize at 10% below the default point.

C) **Cash flows drop more than 50% below the default point.** ✓

D) Default is strictly triggered by a cyclical economic downturn.

Explanation

For firms characterized by average leverage and weak business operations, cash flows typically fall more than 50% below the point of default. Additionally, revenue recovery in these situations is slow, often taking 5 to 10 years. This contrasts with firms possessing a solid business model (even with excessive leverage), where cash flows usually stabilize at only 10% below the default point and revenue recovers within 3 years. Furthermore, defaults in the "average leverage/weak business" category can occur independently of a cyclical downturn.

(Book 5, Module 95.1, LO 95.a)