## 7.13 Curve-Based and Empirical Fixed-Income Risk Measures

**Question 1**
All else equal, an option-free bond's effective duration and approximate modified duration are *closest* when the benchmark par bond curve:
A. is flat.
B. is steeply sloped.
C. makes a parallel shift.

**Question 2**
Shaping risk is most appropriately assessed by measuring the change in a bond's price that results from a:
A. change in the bond's yield-to-maturity.
B. shift in the entire benchmark yield curve.
C. shift in a portion of the benchmark yield curve.

**Question 3**
An investor is evaluating several callable bonds. The investor believes short-term interest rates are likely to rise significantly, but intermediate and long-term rates will be stable. Which of the following types of duration would be *most appropriate* for evaluating the risk of the bonds given the expected flattening of the yield curve?
A. Key rate
B. Modified
C. Effective

**Question 4**
Effective duration is the *most appropriate* duration measure for bonds with:
A. embedded options.
B. predictable cash flows.
C. a well-defined yield-to-maturity.

**Question 5**
Compared with analytical duration, empirical duration is the *more appropriate* measure to estimate the impact of benchmark interest rate
changes for a bond portfolio of:
A. US agency bonds.
B. global high-yield corporate bonds.
C. highly rated European covered bonds.

**Question 6**
Which of the following is *most appropriate* to measure the interest rate risk of a bond with an embedded call option? A measure of:

A. yield duration.
B. curve duration.
C. modified duration.

**Question 7**
A bond matures in 20 years and is callable at the issuer's option any time after the first call date in 3 years. Which of the following types of duration is *most appropriate* for quantifying the bond's interest rate risk?
A. Effective
B. Modified
C. Macaulay

**Question 8**
All else being equal, key rate duration is *most appropriate* for assessing the interest rate risk of callable bonds if:
A. yield volatility is increasing.
B. yield spreads are widening.
C. the yield curve is steepening.