Microeconomics, Module 24, "Risk and Uncertainty" (Chapter 18)

Illustrative Test Questions

(The attached PDF file has better formatting.)

Question 24.1: *Ex Ante* Preferences

When are an individual's *ex ante* preferences under uncertainty illustrated using convex indifference curves?

A. They are always convex.
B. When the individual is risk-preferring.
C. When the individual is risk-neutral.
D. When the individual is risk-averse.
E. They are never convex.

Answer 24.1: D

Question 24.2: Fair Odds

When an individual is offered fair odds, all baskets on his budget line

A. Have the same level of riskiness.
B. Have the same expected value.
C. Are equally desirable.
D. Offer the same level of diversification.
E. Have the same utility.

Answer 24.2: B

The budget line shows what the consumer can afford. If the consumer is offered fair odds, all baskets at the same price have the same expected value. They have the same utility (they are equally desirable) only if the consumer is risk-neutral.

Question 24.3: Fair Odds

Suppose an individual is offered a gamble at fair odds. If the individual is indifferent about how much he bets, he

A. He is risk-averse
B. He is risk-preferring
C. He is risk-neutral
D. He may be either risk-averse, risk-preferring, or risk-neutral
E. The odds can not be fair.

Answer 24.3: C

Question 24.4: Fair Odds and Risk Aversion

When a risk-averse individual is offered a gamble at fair odds,

A. He chooses the basket with least risk.

B. He bets everything on one or the other outcome.
C. He accepts the gamble if the bet is sufficiently small.
D. He is indifferent as to the amount he bets.
E. He chooses the basket with the greatest expected value.

Answer 24.4: A

If the gamble is at fair odds, all baskets have the same expected value, so a risk-averse individual chooses the basket with the least risk.

Question 24.5: Favorable Odds and Risk Aversion

Suppose an individual is given an opportunity to place a bet at favorable odds. How will be respond if he is risk-averse?

A. He will accept the bet.
B. He will decline the bet.
C. He will accept the bet if it is sufficiently small, but he will decline the bet if it is too large.
D. He will accept the bet if it is sufficiently large, but he will decline the bet if it is too small.
E. He will accept the bet if it is sufficiently large, but he will be indifferent about the bet if it is too small.

Answer 24.5: C

If the bet is small, the favorable odds out-weigh the risk; if the bet is large, the risk out-weighs the favorable odds.

Question 24.6: Morale Hazard

The morale hazard problem arises because

A. Some states of the world adversely affect large numbers of individuals.
B. Insurance companies are unable to distinguish good risks from poor risks.
C. People who buy insurance at favorable odds cause losses for the insurers.
D. People with insurance tend to take more risks than people without insurance.
E. Unethical policyholders may seek to defraud insurance companies.

Answer 24.6: D

Question 24.7: Uninsurable Risks

One cannot purchase fair-odds insurance against uninsurable risks like nuclear war, because the insurance company cannot

A. Fully monitor the behavior of insureds.
B. Affect the likelihood of the event.
C. Diversify the risk.
D. Profit from policies issued to risk-preferring customers.
E. Estimate the expected losses.

Answer 24.7: C

{*Note:* This is not a good characterization of insurance practice. Insurers diversify among the shareholders of the company, not among the risks. Insurers accept unique risks, as long as they are not too large relative to the capital of the company.}

Question 24.8: Premium Rates and Seat Belts

Suppose that people who wear seat belts are less likely to have serious injuries in auto accidents than people who don't, but an insurance company has no way of determining which policy holders actually wear seat belts. The insurance company cannot offer unlimited insurance at fair odds for seat-belt wearers because of

A. Risk-preferring behavior
B. Adverse selection
C. Uninsurable risk
D. Moral hazard
E. Morale hazard

Answer 24.8: B

The applicants for insurance know if they wear seat belts, but the insurance company does not know. The informational asymmetry causes adverse selection, where applicants who do not wear seat belts buy the insurance intended for drivers who wear seat belts.

Question 24.9: Expected Return

Suppose that a stock currently sells for $200. The stock returns either −$60 or $100 with equal probability. The expected return of the stock is

A. 10%
B. 20%
C. 25%
D. 30%
E. 40%

Answer 24.9: A

½ × −$60 + ½ × $100 = ½ × $40 = $20, and $20 / $200 = 10%. {*Note:* Stock means and standard deviations are not covered on the final exam.}

Question 24.10: Standard Deviation

Suppose that a stock currently sells for $200. The stock returns either −$60 or $100 with equal probability. The standard deviation of the stock is

A. 10%
B. 20%
C. 25%
D. 30%
E. 40%

Answer 24.10: E

The variance is ½ × (−$60 − $20)^2 + ½ × ($100 − $20)^2 = $80^2. The standard deviation is the square root of the variance, or $80. The stock now sells for $200, so the standard deviation as a percentage return is $80 / $200 = 40%. {*Note:* Stock means and standard deviations are not covered on the final exam.}

Question 24.11: Portfolios

Consider a portfolio for which there is no other portfolio with both a lower standard deviation and a higher expected return. This portfolio

A. Lies on the market line.
B. Is the market portfolio.
C. Is an efficient portfolio.
D. Is a risk-free asset.
E. Is the optimal portfolio for a risk averse investor.

Answer 24.11: C {*Note:* Investment strategy is not covered on the final exam.}

Question 24.12: Risky Assets

Suppose a risk-free asset and a variety of risky assets are available. A risk-averse investor will choose to hold

A. A portfolio from the efficient set.
B. Only the risk-free asset.
C. The market portfolio.
D. A portfolio which combines the risk-free asset and the market portfolio.
E. A diversified portfolio of risky assets financed by borrowing at the risk-free rate.

Answer 24.12: D {Note: Portfolio construction is *not* covered on the final exam.}

Question 24.13: Speculators

Suppose speculators believe that the demand for a commodity will be lower in the future than what suppliers in the market currently expect. Which of the following will *not* occur?

A. Speculators will purchase futures contracts.
B. The future spot price expected by suppliers will be bid down.
C. Suppliers will react to the speculators' actions by increasing current supplies and reducing future supplies.
D. The speculators will increase social gain if they are correct in their expectations.
E. The speculators will revise their expectations to suppliers' beliefs.

Answer 24.13: A

Speculators expect lower prices in the future than suppliers expect, so they *sell* futures contracts, not *buy* futures contracts. {*Note:* Futures contracts are not covered on the final exam.}

Question 24.14: Demand Changes

The demand curve for applies is Q = 55 − 5P, and the supply curve is Q = 5 + 5P. Because of some recent studies, the FDA may label applies as a carcinogen, in which case the demand curve for apples will fall to Q = 35 − 5P. The probability of applies being labeled a carcinogen is 50%. Apple growers must decide at the beginning of the growing season how many apples to produce.

If suppliers expect a price of $5 per unit before they hear about the recent studies, how do they revise their expectations when they hear about the recent studies?

A. Suppliers revise their price expectations downward.
B. Suppliers revise their price expectations upward.
C. Suppliers do not revise their price expectations, because the expectation that the price is $5 per unit is rational.
D. Suppliers do not revise their price expectations, because their expectations are correct 50% of the time.
E. By definition, suppliers can not revise their price expectations until the next period.

Answer 24.14: A

Question 24.15: Rational Expectations

The demand curve for applies is $Q = 55 - 5P$, and the supply curve is $Q = 5 + 5P$. Because of some recent studies, the FDA may label applies as a carcinogen, in which case the demand curve for apples will fall to $Q = 35 - 5P$. The probability of applies being labeled a carcinogen is 50%. Apple growers must decide at the beginning of the growing season how many apples to produce. If suppliers have rational expectations, how many units of applies will they produce?

A. 15 units
B. 20 units
C. 25 units
D. 30 units
E. 35 units

Answer 24.15: C

The expected demand curve is $Q = ½ × (55 - 5P) + ½ × (35 - 5P) = 45 - 5P$. The supply curve is $Q = 5 + 5P$. Equating supply and demand gives

$$45 - 5P = 5 + 5P \Rrightarrow 40 = 10P \Rrightarrow P = 4.$$

If $P = 4$, the quantity supplied is $5 + 5 × 4 = 25$.