Answer Key to Unit 3 Assessment

1. Utility theory quantifies individuals’ preferences and explains behavior of individuals. The theory is based on the premise that people can consistently rank their choices depending upon their preferences.

2. Positive theory seeks to explain the individuals’ observed behavior and choices, while normative theory dictates that people should behave in the manner prescribed by theory.

3. Utility function is a mathematical formulation that ranks the preferences of the individual in terms of satisfaction. The utility theory assumes that people behave as if they have a utility function and act according to that function.

4. The principle of expected utility maximization states that a rational investor acts to select an investment which maximizes his expected utility of wealth.

5. The investor has 2 options: playing the game or not playing the game. If he plays the game, his wealth remains at $5 and his utility is 2.24. If he plays the game, his wealth remains at $5, but his utility is \( p(\text{win})U(\text{win}) + p(\text{lose})U(\text{lose}) = 0.5 \times 4^{0.5} + 0.5 \times 1^{0.5} = 2 \). Because playing the game reduces his utility, he should not participate in the game.

6. The assumptions of the utility theory are:
   a. Completeness: Individuals can rank all possible bundles in some order based on preferences.
   b. More is better.
   c. Mix is better (preferences are convex).
   d. Rationality: if bundle A is preferred to B, and bundle B is preferred to C, then A is also preferred to C.

7. The expected value is a sum of the products of two numbers, the outcomes, and their associated probabilities. The expected utility is the expected level of satisfaction a person gets when faced with uncertain choices.

8. Diminishing marginal utility refers to declining rates of an increase in utility.

9. Availability bias is a tendency to work with whatever information is easily available rather than more accurate information. Experience bias is a tendency to assign more weight to the state of the world that we have experienced and less to others’
experiences. Anchoring bias is a tendency for a person to base his or her subjective assessments of outcomes based on an initial estimate.

10. Sunk cost refers to money spent that cannot be recovered.

11. The E(U) theory is an axiomatic approach to the study of human behavior. If those axioms hold, it can actually predict behavior. See the “Additive von Neumann-Morgenstern Utility” section of Wikipedia’s “Utility” for a discussion of the axioms. The value function approach only describes what actually happens, rather than what should happen.

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12. Adverse selection happens when bad-quality product drives away the good-quality ones from the market.

13. The premium over and above the actuarially fair premium (AFP) that a risk averse person is willing to pay to get rid of the risk is called the risk premium.

14. The risk premium of B over A is $100.