**BUS 204 F21 Quiz 4 Notes**

The shape of a ***person's utility curve*** depends on many factors.

***Alternative*** is a course of action or a strategy that must be chosen by a decision-maker.

***Risk-seeker*** is a person for whom taking a greater risk with a higher potential return has higher utility.

***Risk-avoider*** is a person who gets less utility from a greater risk and higher potential return.

***One-way Analysis of Variance:***

* is an analysis of variance design in which independent samples are obtained from two or more levels of single factors
* has the purpose of testing whether the levels have equal means

***Decision making under certainty is:***

* a decision-making environment in which the future outcomes or states of nature are known
* applied in GAP analysis
* assumes that the future will look like the past

***Decision-making under risk is:***

* a decision-making environment in which several outcomes may occur as a result of decision or alternative
* the probabilities of these outcomes are known
* assumes that the future will look like the past

***Decision-making under uncertainty is:***

* a decision-making environment in which several outcomes occur
* the probabilities of the outcomes are not known
* most people are uncomfortable with this environment
* 

***Criterion of Realism:***

* used the weighted average
* utilizes (alpha), which is a symbol for the coefficient of realism
* is expressed as a number from 0 to 1
* when it is closer to 1, the decision criterion is optimistic
* when it is closer to 0, the decision criterion is pessimistic

***LaPlace is:***

* applied when the future states of nature do not matter
* a decision criterion that places equal weights on all states of nature
* used as a decision-making tool under conditions of uncertainty

***Minimax regret is:***

* based on the opportunity loss
* the cost of not picking the best solution
* used when solving problems with uncertainty

***Decision tree:***

* is a graphical representation of information
* it contains the same information as a decision table
* is built from the left and then solved from the right

***Expected Monetary Value*** is the weighted sum of possible payoffs for each alternative .

***Expected Value of Perfect Information***:

* places an upper bound on what to pay for information
* is the expected value with perfect information minus the maximum EMV
* is applicable to analysis under conditions of uncertainty

Which are the steps in the ***Decision Tree Analysis***:

* define the problem
* structure or draw the decision tree
* assign probabilities to the states of nature
* estimate payoffs for each possible combination of alternatives and states of nature
* solve the problem by computing the expected monetary value for each state of nature

***Conditional Value of Payoff*** is a consequence that occurs as a result of a particular alternative and state of nature.

In a decision tree, a ***decision node*** is a point where the best (the highest EMV) from the available alternatives is chosen.

***Utility theory*** is a theory that allows the decision-maker to incorporate their risk preference and other factors into the decision-making process.

***Sensitivity analysis*** investigates how your decision might change with different input data.

Criteria for making ***decisions under uncertainty*** include:

* Maximax
* Maximin
* Hurwicz criterion
* LaPlace method
* Minimax regret

***Chi-square distribution is:***

* based on the random sample from a normally distributed population
* applied to test the standardized sample variances

***Decision theory is:***

* an analytic and systematic way to tackle problems
* seeks good decisions based on logic
* does not depend on intuition
* ******process and fact-based

***ANOVA assumptions include:***

* the population follow the normal distribution
* the population have equal standard deviations
* the populations are independent

***The F-distribution is:***

* used to test whether two samples are from populations having equal variances
* used when an analyst wants to compare several populations means simultaneously
* samples can be randomly selected

***Seven steps of decision-making include:***

* clearly define the problem at hand
* list the possible alternatives
* identify the possible outcomes or states or nature
* list the payoff or profit of each combination of alternatives and outcomes
* select one of the mathematical decision theory models
* apply the model
* decide