Unit 5 Quiz C

Randomly select 3 questions to ask members of the group requesting the next set of assignments. If they get all questions correct, give them the entire stack of quizzes and assignments so that they can quiz the next group. If they get any question wrong, send them back to their seats to review and then try again in 10 minutes or more.

1. What happens at the optimal point where a firm minimizes its costs, in terms of isoquants and isocosts?

   Answer: At the optimal cost-minimizing point, the isoquant (representing the desired output level) is tangent to the lowest possible isocost curve. At this point of tangency, the slopes of the isoquant and isocost curves are equal.

2. If you double all inputs in a production process and get exactly double the output, what type of returns to scale does this represent?

   Answer: This represents constant returns to scale (CRS).

3. In the tangency condition $MP_1/MP_2 = w_1/w_2$, what do the terms MP_1 and w_1 represent?

   Answer: MP1 represents the marginal product of input 1 (how much additional output is produced by adding one more unit of input 1), and w1 represents the price or wage rate of input 1.

4. Why is constant returns to scale often considered a reasonable long-run expectation for many industries? What argument supports this view?

   Answer: Constant returns to scale is often considered reasonable due to the "replication argument." This argument suggests that if a firm is operating at its most efficient scale, it should be able to simply replicate its entire operation to double its output. For example, if a factory is operating efficiently, building an identical factory next to it should double the output.

5. In the context of the electricity industry study by Nerlove (1963), what does a coefficient of output less than 1 in the cost function indicate about returns to scale?

   Answer: In Nerlove's study, a coefficient of output less than 1 in the log-linear cost function indicates increasing returns to scale. This means that as electricity companies grow larger, their average costs decrease, supporting the idea that they are natural monopolies.

6. When a firm is minimizing costs, what relationship must exist between the marginal product per dollar spent on each input?

   Answer: When a firm is minimizing costs, the marginal product per dollar spent must be equal across all inputs. This means MP1/w1 = MP2/w2, indicating that the last dollar spent on any input yields the same additional output.