TOPIC 3 – PART 3 REVIEW QUESTIONS

1. Which of the following is the best description of productive efficiency?

A. An allocation is productively efficient if it is not possible, by re-allocating available factors, to produce more of one good without producing less of another.

B. An allocation is productively efficient it is not possible to change the number of firms within a sector in a way that allows more aggregate output to be produced in that sector using the same aggregate input values.

C. An allocation is productively efficient if it does not lie outside the production possibility frontier.

D. An allocation is productively efficient if the aggregate quantity of all goods is maximized.

2. Consider **Figure R3-4**. It depicts sector-level isoquants for sectors Y and X in an Edgeworth box whose dimensions measure the quantity of factors available for use in production. Which of the following statements is true?

A. Allocation A is Pareto efficient.

B. Allocation B is not productively efficient.

C. The Pareto frontier in this Edgeworth box is the locus of tangencies between sector-level isoquants.

D. The slope of an isoquant in this Edgeworth box is called the sector-level marginal rate of transformation.

3. If an allocation is productively efficient then it must not be possible to change the number of firms within a sector in a way that allows more aggregate output to be produced in that sector using the same aggregate input values.

A. True.

B. False.

4. Consider **Figure R3-5**. It depicts the production possibility frontier (PPF) in a two-sector economy, drawn for a given level of available labour. Which of the following statements are true?

A. This PPF is linear because there are constant returns to scale in the production of good *x* and good *y*.
B. If there is an increase in the amount of potential labour retained as leisure, this PPF will shift outward.
C. The slope of this PPF (in absolute value) is called the marginal rate of transformation between good *x* and good *y*, and it effectively measures the marginal cost of an extra unit of good *y* in terms of good *x*.
D. All of the above.

5. Which of the following is the best description of allocative efficiency?

A. An allocation is allocatively efficient if it is not possible, by re-allocating available factors, to produce more of one good without producing less of another.
B. An allocation is allocatively efficient if it lies on the production possibility frontier.
C. An allocation is allocatively efficient if the aggregate quantities of goods produced, and the allocation of those goods across individuals, is such that no person can be made better off without making someone else worse off.
D. An allocation is allocatively efficient if the marginal rates of substitution are equated across all persons at that allocation.

6. In an economy with just two people, an allocation is allocatively efficient if it is on the production possibility frontier, and $MRS^1_{xy} = MRS^2_{xy} = MRT_{xy}$ (as in Figure R3-6). Hint: see the next question.

A. True.
B. False.

7. The correct answer to the previous question is "false" because allocative efficiency also requires that the economy is on the best production possibility frontier in terms of potential labour allocated to leisure.

A. True.

B. False.

8. The first welfare theorem states that "the competitive equilibrium where supply equals demand maximizes social efficiency".

A. True.

B. False.

9. The first welfare theorem states that an equilibrium in a perfectly competitive economy is Pareto efficient. Which of the following is not required for the economy to be perfectly competitive?

A. All agents are price-takers.

B. There are no increasing returns to scale or other barriers to entry.

C. There are no externalities.

D. Buyers and sellers have perfect information.

10. Recall that productive efficiency requires $TRS^X = TRS^Y$. That is, the technical rates of substitution in sector X and sector Y must be equal. Which property (or properties) of the competitive equilibrium ensures that this is true?

A. Free entry.

B. At any given level of output, firms choose their inputs to minimize cost.

C. Firms are price-takers in their input markets.

D. Both B and C.

11. Recall that productive efficiency requires that it must not be possible to change the number of firms within a sector in a way that allows more aggregate output to be produced in that sector using the same aggregate input values. This requirement is satisfied in the competitive equilibrium because

A. firms maximize profits.
B. there is free entry.
C. all profits are returned to people via dividends.
D. Both A and B.

12. In the competitive equilibrium

$$MRT_{xy} = \frac{p_X}{p_Y}$$

Which property (or properties) of the competitive equilibrium are critical for this result?

A. Firms maximize profits.
B. Firms are price-takers in their output markets.
C. Consumers maximize utility.
D. Both A and B.

13. Recall that allocative efficiency requires

$$MRS_{xy}^1 = MRS_{xy}^2 = ... = MRS_{xy}^N$$

That is, marginal rates of substitution between *x* and *y* are equated across consumers.

Which property (or properties) of the competitive equilibrium are critical for this result?

A. Firms maximize profits.
B. Consumers are price-takers in the output markets.
C. Consumers maximize utility.
D. Both B and C.

14. Recall that allocative efficiency requires

$$MRS_{ly}^{1} = MRS_{ly}^{2} = ... = MRS_{ly}^{N}$$

That is, marginal rates of substitution between *l* and *y* are equated across consumers.

Which of the following statements is false?

A. This condition is needed to ensure that the economy is on the right production possibility frontier in terms of potential labour allocated to leisure.

B. This condition is needed to ensure that the aggregate quantity of leisure is allocated efficiently across individuals.

C. This condition holds in the competitive equilibrium because consumers maximize utility and are price-takers in product markets and in the labour market.

D. None of the above.

15. The so-called "invisible hand of the market" refers to the idea that

A. free markets always yield the best possible outcome.

B. prices effectively coordinate the independent actions of all the agents in the economy.

C. government intervention in markets should be as unintrusive as possible.

D. Adam Smith always wore gloves.

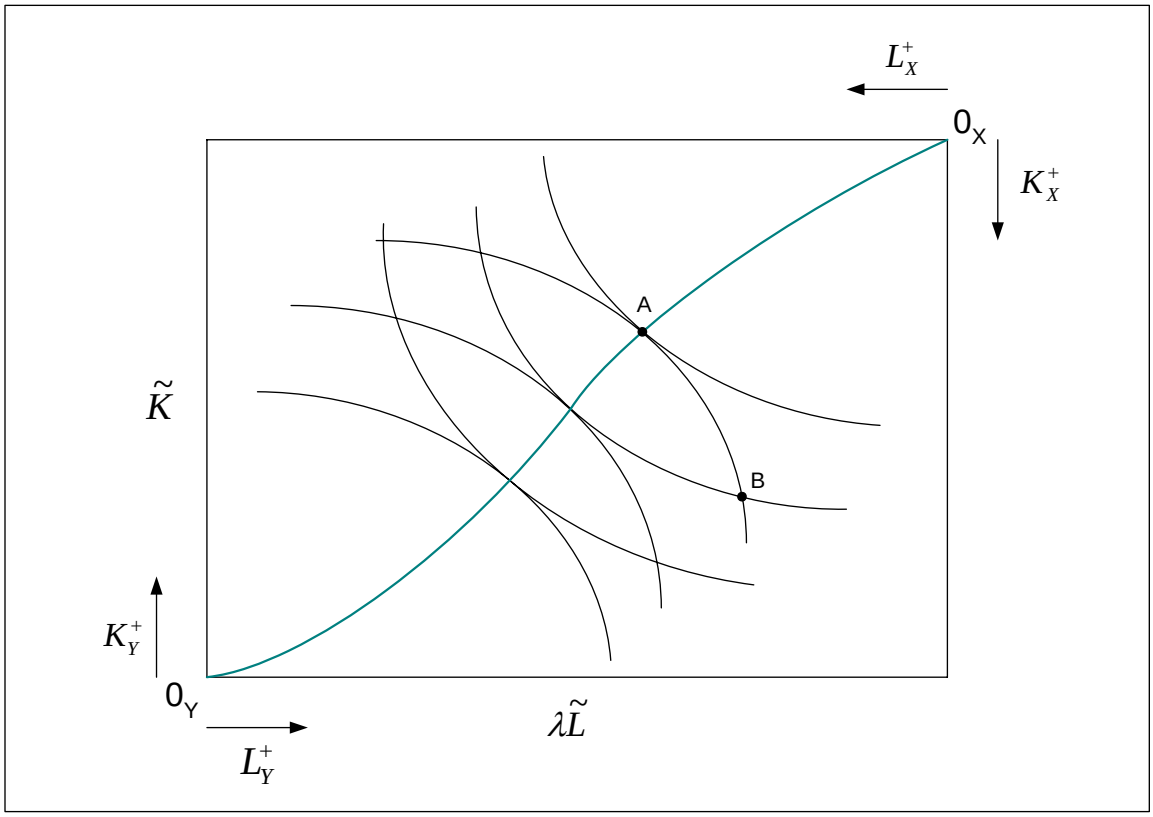

Figure R3-4

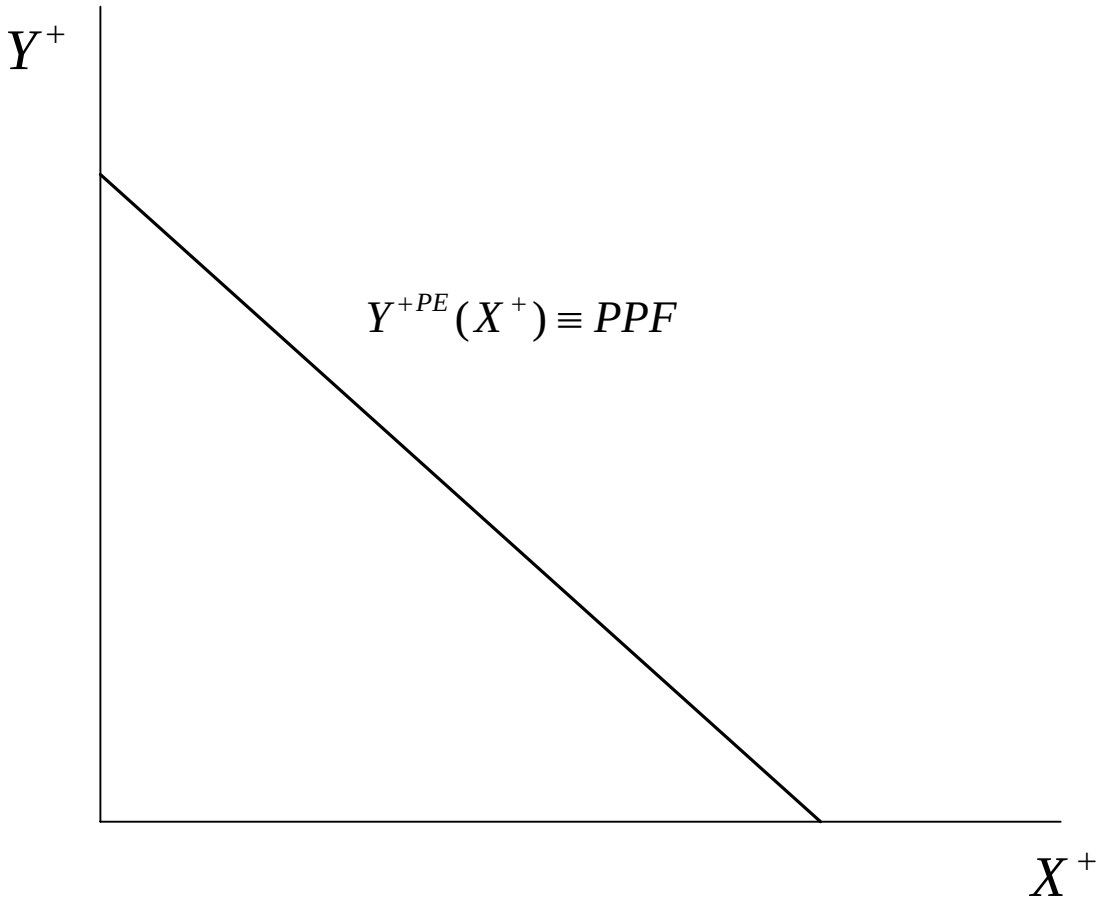

Figure R3-5

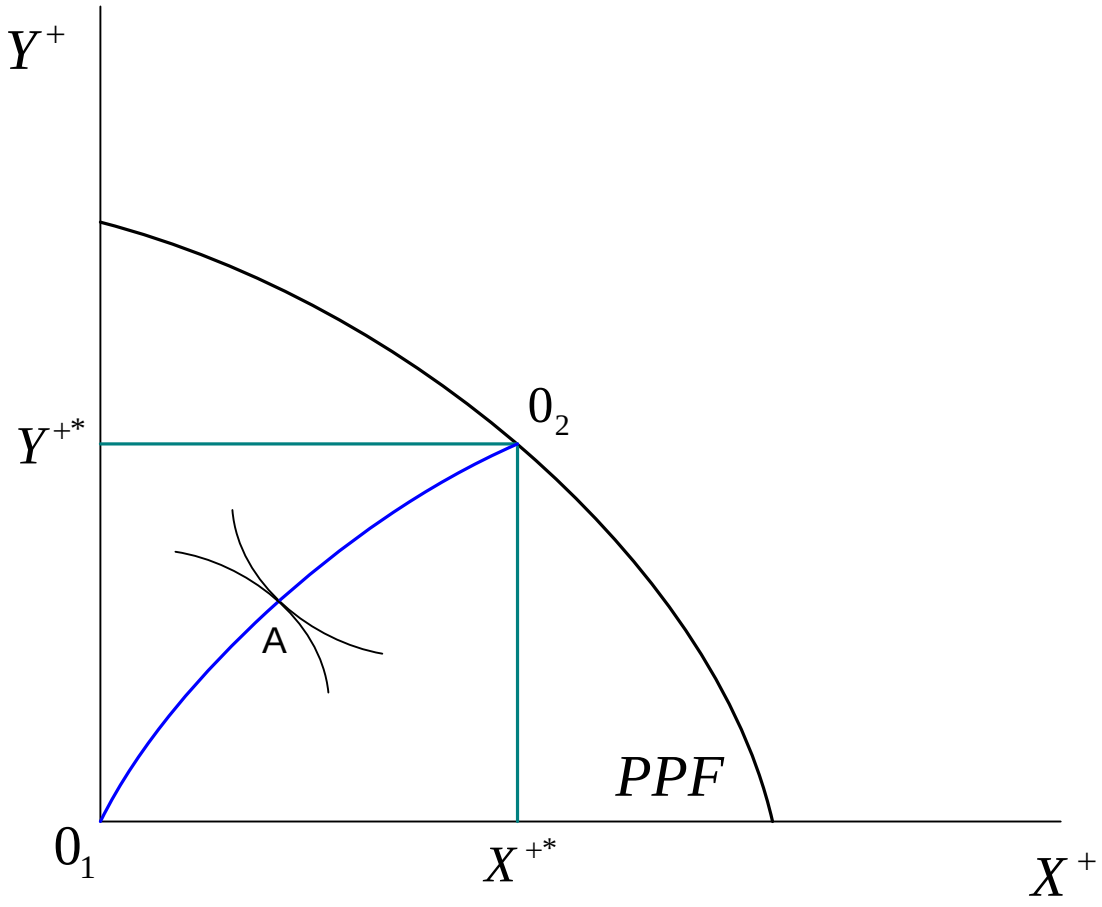

Figure R3-6

ANSWER KEY

1. A
2. B
3. A
4. C
5. C
6. B
7. A
8. B
9. D
10. D
11. D
12. D
13. D
14. D
15. B