National and Kapodistrian University of Athens
Department of Economics   **Academic year 2025-2026**
                                                Fall-Winter term
Course: Public Finance
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                                                Date due: *14 November 2025*

Assignment No 1.   Answer all questions.

Multiple choice questions – Counts 2.5% each

1. A two-person utility possibilities frontier is downward-sloping because starting from a Pareto optimal allocation
a. you can always add to both individuals' utilities.
b. you can never add to either individual's utility.
c. you can always increase production by becoming more efficient.
d. you can only increase one individual's utility by decreasing the other individual's utility.

2. The First Fundamental Theorem of Welfare Economics states that if all technical assumptions hold
a. a perfectly competitive economy generates an efficient allocation of resources.
b. a centralized socialist economy generates an efficient allocation of resources.
c. a perfectly competitive economy cannot generate an efficient allocation of resources.
d. a decentralized capitalist economy generates an efficient allocation of resources.

3. The First Fundamental Theorem of Welfare Economics implies that as long as the technical assumptions hold
a. all economic systems do equally well in satisfying the efficiency criterion.
b. only centrally planned socialism can do better than perfect competition in satisfying the efficiency criterion.
c. no economic system other than perfect competition can do better in satisfying the efficiency criterion.
d. no economics systems do very well in satisfying the efficiency criterion.

4. The Second Fundamental Theorem of Welfare Economics states that if all technical assumptions hold,
a. a perfectly competitive economy cannot generate any of the feasible efficient allocations of resources with a suitable distribution of initial resources.
b. a perfectly competitive economy can generate several of the feasible efficient allocations of resources with a suitable distribution of initial resources.
c. a centralized socialist economy can generate any of the feasible efficient allocations of resources with a suitable distribution of initial resources.

d. a perfectly competitive economy can generate any of the feasible efficient allocations of resources with a suitable distribution of initial resources.

5. The term positive economics refers to
 a. value judgements, based on analytical economic models, regarding policy proposals.
 b. economic analysis which assume that voluntary economic transactions are positive-sum.
 c. economic analysis which involves applied econometrics, as opposed to pure theory.
 d. description and explanation of economic phenomena.

6. Asymmetric information is said to exist when
a. consumers have more information relating to the quality of a product than firms.
b. firms have more information relating to the quality of a product than consumers.
c. one party (either consumers or firms) has more information relating to the quality of a product than the other party.
d. one party has no information whatsoever relating to the quality of a product.

7. The Second Welfare Theorem is important because it shows that:
a. Any Pareto efficient outcome can be achieved as a competitive equilibrium.
b. A competitive market is necessary and sufficient for Pareto efficiency.
c. Social welfare is always maximized at a competitive equilibrium.
d. Government intervention is required to ensure Pareto efficiency.

8. To achieve an efficient allocation of resources
a. all prices must be the same.
b. all agents must face the same prices.
c. all firms must have the same marginal cost curves.
d. all individuals must receive the same marginal utilities

9. For an economy to maximize social welfare, the
a. marginal utilities of income must be equal for all individuals.
b. marginal social welfare weights must be equal for all individuals.
c. social marginal utilities of income must be equal for all individuals.
d. incomes must be equal for all individuals.

10. A difference between normative and positive analysis is that
a. only normative analysis is relevant for choosing among policy options.
b. positive analysis deals with facts and cannot be a source of disagreement.
c. positive analysis is descriptive whereas normative analysis is evaluative.
d. normative analysis is ignored by economists because they have no expertise in making value judgments.

11. Pareto efficiency is achieved when
a. the gain from an exchange outweighs the loss.
b. all parties are made better off by an exchange.
c. at least one party is made better off by an exchange.
d. no party can be made better off by an exchange without at least one other party being made worse off.

12. The set of Pareto efficient allocations in an Edgeworth-Bowley box diagram is

a. found along the flattest indifference curve of the individual in the upper right of the box.
b. the set of points on a straight line running from the lower left corner to the upper right corner of the box.
c. the most equitable allocation of resources among the individuals.
d. known as a contract curve

A. Essay type questions (Explain briefly) – counts 5% each

1. Obesity is perceived to be a national health problem in the United States. One suggestion to deal with this problem is a "fat tax." The idea is to levy a tax on foods containing more than a government prescribed percentage of the daily minimal fat intake. Is such a tax consistent with a mechanistic view of government?

2. Explain how you would expect a libertarian, a social democrat, and someone with an organic conception of the state to react to the following laws:

a. A law prohibiting gambling
b. A law mandating seat belt use
c. A law mandating child safety seats
d. A law prohibiting prostitution
e. A law prohibiting polygamy
f. A law requiring all commercial signs be written in the country's native language.

3. For each of the following policy changes, explain why the change is likely or not likely to be a Pareto improvement. In each case, state who the losers and winners are likely to be.

a. Building a park, financed by an increase in the local property tax rate.
b. Building a park, financed by the donation of a rich philanthropist.
c. Increasing medical care facilities for lung cancer, financed from tax revenues collected from the personal income tax.
d. Increasing medical care facilities for lung cancer, financed out of an increase in the cigarette tax.

4. There are three people (A, B, and C) and five possible states of their economy summarized in the table below by the resultant utilities of each of the three people. Which of the states are Pareto optimal?

State	U_A	U_B	U_C
1	10	10	10
2	12	9	7
3	12	10	7
4	11	13	10
5	9	14	14

C. Problems. Answer all problems (counts 10% each)

1. Consider two firms A and B are producing lamps using input x and y, with no externality. A has the production function $F_A = x_A + y_A$ and B has the production function $F_B = x_B^{1/2} y_B^{1/2}$. The resource constraint is $x_A + x_B = 10$ and $y_A + y_B = 10$. Suppose the inputs are allocated so that $x_A = 6$, $y_A = 8$ and $x_B = 4$, $y_B = 2$. Is this allocation Pareto Efficient? If you say no, please give a way to make Pareto improvement.

2. You have €100 to spend on food and clothing. The price of food is €5 and the price of clothing is €10.

a. Graph your budget constraint.
b. Suppose that the government subsidizes clothing such that each unit of clothing is half-price, up to the first 5 units of clothing. Graph your budget constraint in this circumstance.

3. Consider a free market with demand equal to $Q = 1{,}200 - 10P$ and supply equal to $Q = 20P$.

What is the value of consumer surplus? What is the value of producer surplus?

4. Consider a two person (I and II), two good (x and y) Exchange Economy.
   Assuming a total fixed supply of 1 for each of the two goods, and for the utility functions do the following:
(i) Sketch the shape of the typical indifference curve;

(ii) In an Edgeworth Box, draw the "Contract Curve" (set of all the Pareto efficient points) for this Economy.

$U_I(x,y) = x + y$
$U_{II}(x,y) = 2x + y$

5. Consider a case of pure exchange, with no externalities. A has the utility function $U_A = 2X_A + 2Y_A$ and B has the utility function $U_B = X_B Y_B$. The resource constraint is $X_A + X_B = 10$ and $Y_A + Y_B = 10$. Consider the following two allocations. One is $X_A = 1$, $Y_A = 1$ and $X_B = 9$ $Y_B = 9$; the other is $X_A = 5$, $Y_A = 7$ and $X_B = 5$, $Y_B = 3$. Are these two allocations Pareto Efficient? Explain.