PUBLIC ECONOMICS

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EXERCISES

TOPIC 2.1. THE NORMATIVE PUBLIC FINANCE

EXERCISE 1

The fundamental theorem of welfare economics says that the market will be capable of achieving an efficient allocation of resources by itself:
-Will the resulting market allocation be fair?
-Will public sector intervention must be necessary?

EXERCISE 2

The possible distributions of utility between individuals A and B:

Possibilities	U(A)	U(B)
1	110	0
2	80	20
3	60	30
4	50	50
5	60	10

Indicate which option will be chosen and whether they coincide or not:
-If the utilitarian criterion is applied.
-If the Rawlsian criterion is applied.

EXERCISE 3

Suppose that in a municipality in Cantabria there is a communal woodland freely accessible to all the neighbours, who use it for grazing and firewood supply. Denote by "e" the intensity of use of the woodland (in hundreds of hours of annual use) and the annual production of services from this common property resource as $F(e)=-e^2+75e+40$. Assume that the price of one unit of communal woodland services (which coincides with that charged by the owner of a neighboring woodland is P=5 euros, and that the opportunity cost of the time spent using the communal woodland is W=5 euros. Given this case of common property resources, we are asked to determine the following:

a) What type of economic agents are failing in this case?
How are common property resources different from public goods?
Finally, cite some other examples of common property resources. Give reasons for your answer.
b) Does the national road network, the electricity transmission network or the public lighting or water supply of a locality belong to the category of common property resources, and why?
c) The optimal intensity of woodland used in this case and the corresponding benefits. Justify the answer.
d) What would happen to the benefits in the case of free access? What would be the intensity of use and marginal productivity with free access? Justify the answers.
e) If there are 12 neighbors in the municipality, analyze the viability of the following Mayor's decisions: assigning annual usage fees to each neighbor and divide the woodland into 12 homogeneous extensions, one for each neighbor. What other type of solution could be adopted in this case? Justify the answer.

EXERCISE 4

1. A resource allocation is Pareto-Superior when:
a) The assignment improves the situation of one subject without worsening the situation of another.
b) It is not possible to improve the situation of one subject without making worse the situation of another subject.
c) It is possible to improve the situation of one subject by making worse the situation of another subject.
d) None of the above answers are correct.

2. Production efficiency is obtained when:
a) $MRS_{XY}^{A} = MRS_{XY}^{B}$
b) $MRS_{XY}^{A} = MRT_{XY}$
c) $MRTS_{KL}^{X} = MRTS_{KL}^{Y}$
d) $MRT_{XY} = MRTS_{KL}^{X}$

3. When an allocation is efficient in consumption and production:
a) $MRS_A = MRS_B$
b) $MRS_A = MRS_B + MRT$
c) $MRS_A = MRS_B = MRT$
d) None of the above answers are correct.

4. A Natural Monopoly situation is generated when:
a) Low-cost investments are needed in the industry.
b) Average costs increase with production.
c) Diseconomies of scale occur.
d) None of the above answers are correct.

5. The intervention of the Public Sector in a situation of Common Property Resources, may consist of:
   a) The Public Sector gives transfers to those who use Common Property Resources to use them more.
   b) The Public Sector taxes users of Common Property Resources so that they have a cost.
   c) The Public Sector exploits the Common Property Resources above what the market would do.
   d) None of the above answers are correct.

6. The Social Welfare Function (SWF):
   a) It depends on the utility of the subjects of society.
   b) It collects the preferences of society.
   c) It is represented by indifference curves.
   d) All the answers are correct.

7. Rawls's Social Welfare Function:
   a) It will be individualistic.
   b) It will be the sum of the profits of the subjects of the society.
   c) It will always benefit the one with the lowest utility.
   d) None of the above answers are correct.

8. The Utilitarian Welfare Function:
   a) It will be the sum of the profits of the subjects of the society.
   b) It will be adverse to inequality.
   c) It will always benefit the one with the lowest utility.
   d) None of the previous answers are correct.