Université Toulouse 1 Capitole
Ecole d'économie de Toulouse

Année universitaire 2016-2017

Session 1

Semestre 1

Master 1 Econometrics, Statistics, Economie Droit & Economics

Epreuve : Environmental Economics

Date de l'épreuve : 13 décembre 2016

Durée de l'épreuve : 1h30

Liste des documents autorisés : Aucun

Liste des matériels autorisés : Aucun

Nombre de pages (y compris page de garde) : 5

Sticker - Bar code	Master	Grade
		/15

Instructions

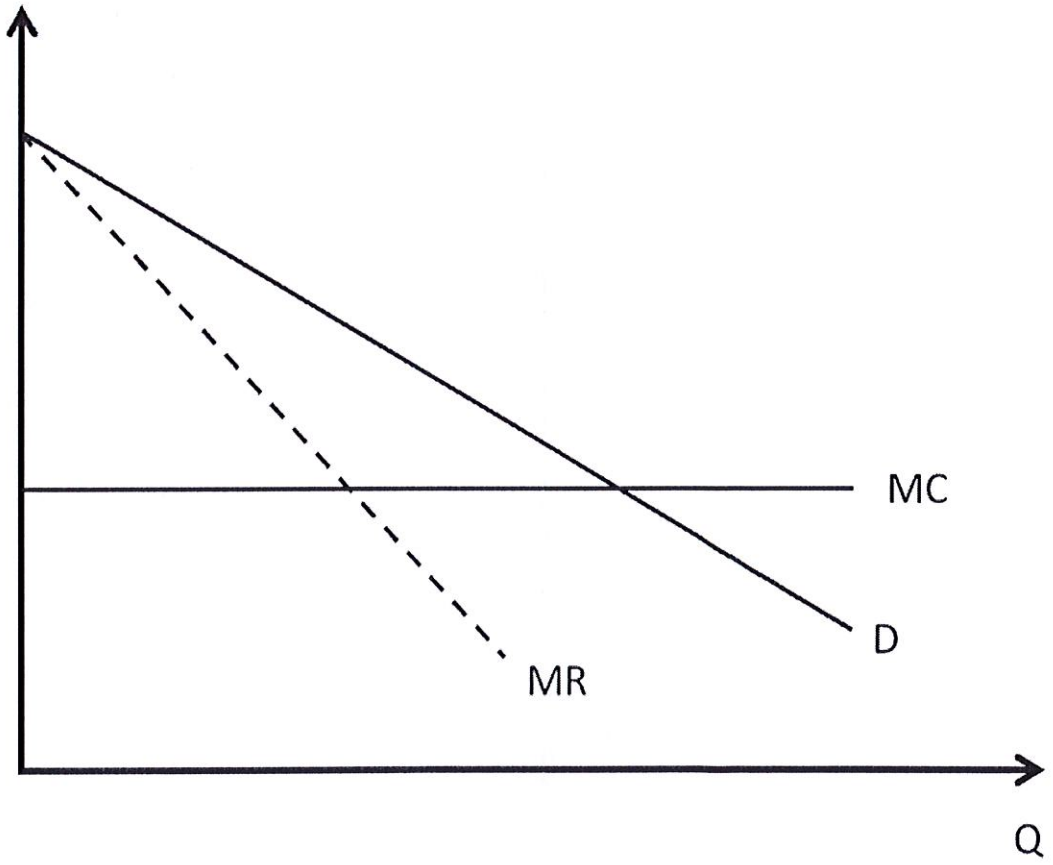
- *Duration: 1 hour and 30 minutes.*
- *No documents allowed*
- *Calculators not allowed.*
- *Answers* **must** *be included on the* Answer sheet. *Questions 1 to 3 in the table and question 4 in the graph provided.*
- *Grading for each question:*
  - *Multiple choice questions:*
    - *No answer: 0 points*
    - *Correct answer: 3 points*
    - ***!!!!! Wrong answer: -1.5 points !!!!!***
  - *Problem set:*
    - *Correct answer: 6 points (Requires that both numbers provided in answer table are correct.)*
    - *Incorrect answer can give between 0-3 points depending on answer.*
    - *Please read carefully, be brief and precise. Answer has to fit on page 4 of this exam.*
  - *Question 4: Correct answer = 3, incorrect answer = 0.*
- *Total number of marks: 3 for each multiple choice question and graphical question, and 6 for problem set* $\Rightarrow$ *Total* $= 15$

PART 1. Answer sheet

			3		
Question	1	2	No bargaining	Merged	
Answer					
Grade					

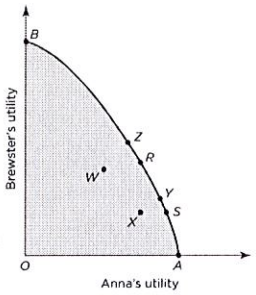
Note: For questions 1 to 3 provide your answer in row *Answer*. Leave row *Grade* empty. For questions 1 and 2 answers should be (A, B, C, or D) and for question 3 the answers should be numbers (i.e. the production of L in each scenario).

Question 4



PART 2. Questions

1. Based on the following figure, which of the following statements is not correct?



   A. On Pareto grounds we cannot compare X and B.

   B. On Pareto grounds we cannot compare X and Z.

   C. On Pareto grounds we cannot compare X and Y.

   D. On Pareto grounds we cannot compare X and W.

2. A municipality is operating a ski resort. Previously access has been free but the municipality is now considering to demand a fee for access and usage of the resort. The cost (C) of running the ski resort is constant and equal to $C = 100,000$. The resort currently attracts 50,000 visitors and it is expected that a maximum of 100,000 individuals could be potential visitors. Even in the case of the maximum visitation rate usage of the resort would be non-rivalry (e.g. no congestion). The members of the board that will set the fee have all taken "Economics 101" and has decided to set a fee that supports a Pareto optimum. What should the fee be?

   A. Fee $= 0$

   B. Fee $= 0.5$

   C. Fee $= 1$

   D. Fee $= 2$

3. Problem set: Assume two firms, a steel producer and a laundry with the following cost functions and prices for steal (S) and laundry (L),

   - The cost of producing steel is: $C_S(S) = S^2 + 8$
   - The costs of producing laundry is: $C_L(L, S) = L^2 + LS + 4$
   - The fixed costs: $C_S(0) = C_L(0, S) = 0$
   - Price of steel, $p_S = 8$, price of laundry, $p_L = 10$

   Hence, the production of steel has an effect on the cost of producing laundry. (1) What will be the profit maximizing strategies for the two firms if no transfer/bargaining goes on between them? State the amount of laundry produced in the table on the *Answer sheet.* (2) What would be the profit maximizing strategies if the two firms merged, i.e. the externality would be internalized. State the amount of laundry produced in the table on the *Answer sheet.*

4. Graphical illustration:

   Assume a monopoly that produces good (Q) that also leads to emissions, i.e. a negative externality. Show graphically the extra deadweight loss (DW) from the introduction of a Pigouvian fee (equal to the the externality) in the graph provided in the answer sheet. That is, you are asked to show the extra DW from the Pigouvian fee compared to the situation with a monopoly but no fee. Make sure that this extra DW is clearly visible and separate from any other potential DW losses. In the graph the demand function (D), the marginal revenue function (MR) and the the private marginal cost function (MC), i.e. without the negative externality, are already provided.

PART 3. Calculation sheet for Question 3