STOCKHOLM UNIVERSITY
Department of Economics

Course name:	**Labor Market Economics**
Course code:	**EC2102**
Examiner:	**Peter Skogman Thourise**
Number of credits:	**7,5 credits**
Date of exam:	**Saturday, February 23, 2013**
Examination time:	**3 hours**

Write your identification number on each paper and cover sheet (the number stated in the upper right hand corner on your exam cover).

Do not write answers to more than one question in the same cover sheet. Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. No aids are allowed.

Please give short and precise answers!

The exam consists of 5 main questions where each main question includes several sub questions. The points for each sub question are stated after each such question. The exam can yield 100 points in total. For the grade E 40 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

Results will be posted on the notice board, House A, floor 3, on March 15, 2013 the latest.

Good luck!

Question 1 – Labour supply (20 points)

a) The worker maximizes utility over consumption and leisure. Derive the first order condition from the worker's optimization problem and give an intuitive interpretation of this first order condition (**8 points**).

b) Say that you estimate the following empirical work hours regression separately for men and women:

$$ln(\text{Weekly work hours}) = a + bln(\text{Hourly wage rate}) + cNonLabourIncome + e$$

You find that the estimate of *b* for men is -0.1 and 0.2 for women. Interpret these estimates for both men and women. Could you say whether the income effect or the substitution effect dominates over the other for men and women, respectively? (**8 points**)

c) Discuss the implications of a cash grant on work incentives (a cash grant is given to individuals if they don't work and the grant disappears when they start working). (**4 points**)

Question 2 – Compensating wage differentials (15 points)

a) Discuss the basic idea with the theory of compensating wage differential. (**7 points**)

b) Explain intuitively why it is difficult to empirically find evidence this theory. (**8 points**)

Question 3 – Human capital (25 points)

a) If there two groups of individuals, one with high and one with low ability, but with equal discount rates. Explain why the human capital theory predicts that they will have different schooling levels. Explain why the comparison of the average wage differential between the two groups is a biased estimate of the return to schooling. (**10 points**)

Suppose that you access to information which quarter an individual is born, how many years the individual has been in school and the wage rate at the age of 40. Due to the legislation discussed in Angrist & Krueger (1991) those who are born in the first quarter have less years of schooling on average compared to those who are born in the other quarters.

Consider the following definitions:

QB = 1 if the individual is born in the first quarter, 0 otherwise
Wage = hourly wage rate
Sch = Years of schooling

The following estimations are estimated

$$ln(Wage) = 5 + 0.07Sch \quad (1)$$

$$Sch = 12 - 0.1QB, \quad (2)$$

$$ln(Wage) = 6 - 0.01QB \quad (3)$$

b) What is the marginal rate of return to schooling according to equation (1)?
How do you interpret equation (2) and (3)? Calculate the causal return to schooling based on the estimations presented above (i.e., calculate the IV-estimate). Give the intuition of this strategy and why it solves the selection problem. (**15 points**)

Question 4 – Discrimination (20 points)

Suppose years on the labour market (LEXP, labour market experience) is the only variable that affects earnings. The equations for the hourly wage rates of male (m) and female (f) workers are given by:

$$w_m = 112 + 5\text{LEXP}$$

and

$$w_f = 90 + 4\text{LEXP}.$$

On average, men have 20 years of labour market experience and women have 15 years of labour market experience

- **a)** What is the male-female average wage differential in the labour market? (**3 points**)
- **b)** Using the Oaxaca decomposition, calculate how much – in terms of precent – of this wage differential is due to discrimination? (**12 points**)
- **c)** Explain why this might be a poor measure of discrimination. (**5 points**)

Question 5 – Labour Demand and Unemployment (20 points)

- **a)** Assume that a firm chooses the number of workers by maximizing profits. Further assume that the firm operates under perfectly competitive product and factor markets implying that price and the wage are perceived as constants from the firm's perspective. Derive the first order condition from the firm's short run maximization problem and show that labour demand is decreasing in the wage. (**10 points**)

- **b)** Explain using search theory how an increase in the unemployment benefit level can affect search behaviour and what the implications are for the unemployment level. (**5 points**)

- **c)** Explain using search theory how an extension of the time period in which you can receive unemployment benefits affect search behaviour and what the implications are for the unemployment level. (**5 points**)