FINAL Exam: Economics 463, Labor Economics
Fall 2003 in R. Butler's class

YOUR NAME:_____

Section I (60 points) Questions 1-20 (3 points each)

Section II (20 points) Questions 21-24 (5 points each)

Section III (120 points) Questions 25-30 (20 points each)

Section I. Define or explain the following terms (3 points each)

1. human capital externality--

2. substitution and income effects of a wage increase--

3. skill biased technological change--

4. worker surplus--

5. implicit contracts--

6. defined benefit vs. defined contribution pension programs--

7. perfectly discriminating monospony--

8. scale effect--

9. cobweb model--

10. fixed money costs of work (effect on the budget)-

11. sample selection in female labor supply —

12. hierarchical discrimination--

13. hedonic equilibrium—

14. homothetic production function—

15. regression towards the mean--

16. efficiency wages—

17. principal-agent problem—

18. difference-in-difference estimator—

19. deadweight loss of a payroll tax--

20. Oaxaca decomposition--

Section II. Part one: True, False, or Uncertain (sometimes true). You are graded on your explanation

21. “About 15 years ago, the U.S. began taxing unemployment insurance benefits. By so doing, the unemployment rate should have dropped.”

22. “If workers underestimate risk on the job (assume that this is true), legislation like the Occupational Health and Safety Act that effectively limits risk on the job will always make workers better off.”

23. “Human capital theory suggests that the distribution of current earnings in the population is a fairly good indicator of the distribution of lifetime wealth.”

24. “Labor Supply curves will always slope upward as a function of the anticipated wage rate (there is no backward bending labor supply curve for expected increases in the wage rate).”

Section III. Bigger Questions

25. The compensating wage problem in the market for risky jobs. SUPPLY: Assume that the compensating variation for risk (Z, just as in class) varies across workers following a uniform distribution:

$$G(\Delta W) = \Delta W/\varphi \quad \text{where } \Delta W \leq \varphi$$

giving the fraction of workers choosing risky jobs (N_1) as a function of the compensating wage differential, ΔW. The compensating differential ΔW becomes a rent if it is larger than that required (namely Z) to induce them to work.

DEMAND: To keep the analysis simple, we also assume that the Benefit from allowing risk (B) is also uniformly distributed so that

$$3)\ F(\Delta W) = \Delta W/\alpha \quad \text{where } \Delta W \leq \alpha$$

is the number of firms for whom B is less than the compensating wage ΔW so that it is cheaper (in terms of lost output) to have a safe production environment than it is to pay the extra wages associated with risky work.

a) Show that supply curves slope upward and demand curves slope downward (where the relative employment of risky to safe workers (N_1/N_0) is a function of the wage differential, ΔW).

b) Find the (at least the implicit) equilibrium wage differential, ΔW.

c) What happens to the relative number of risky workers and the compensating wage when risk aversion increases (i.e., φ increases)?

26. a. Describe what determines the benefits paid out under workers' compensation and unemployment insurance (describe the institutional framework—i.e., not supply and demand).

b. What are the moral hazard issues with respect to workers' compensation and unemployment insurance, and how do these systems address workers' moral hazard incentives?

27. a) Discuss Borjas' model of comparative advantage in household production, with spouses Jack and Jill.
b) What tends to happen as Jack's market wage increases?
c) What tends to happen as Jill's marginal product at home increases?

28. a) Develop the model of employer discrimination as thoroughly as you can, with the employer maximizing her utility (which depends on profits, and the proportion of blacks in the firm) subject to a profit function constraint. If she has distastes for hiring blacks, indicate in the model why she would hire them, and under what conditions she would hire even more. b) If equally capable gals down the road don't have tastes for discrimination, but have the same access to the capital market, what is likely to happen in the long run?

29. Assume that coal in the United States accounts for virtually all the worlds' supply, and that
*it is a competitive industry in all markets, with the elasticities of factors supplied to the industry being infinite,
*that the coal production function exhibits constant returns to scale
*that before the following disturbances take place the industry is in long-run equilibrium with labor's share of total costs being 3/4
*that the elasticity of product (coal) demand is 3/2
*the elasticity of substitution between capital and labor equals 1/2

Consider the effect of each of the following (i.e., I, II, III and IV) disturbances will have on the percentage change in employment (L) and output per employment (Y/L):

I. A wage increase of 50% caused by the unionization of the industry

II. An excise tax of 15% imposed on coal output at the mine

III. A 10% decline in the price of capital services

30. Discuss the two models of search developed in the last part of the course: the Stigler rule vs. the reservation rule. What are the differences in their assumptions? Describe what kind of markets that each best describes.