EXAMINATION #3 VERSION A
"Wage Structure, Labor Mobility, and Discrimination"
April 11, 2012

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Cell phones or other wireless devices are NOT permitted. Point values for each question are noted in brackets. Maximum total points are 100.

I. Multiple choice: Circle the one best answer to each question. [2 pts each, 40 pts total]

(1) Because the wage distribution is positively skewed,
a. most workers earn a wage greater than the average wage.
b. most workers earn a wage less than the average wage.
c. exactly half of workers earn a wage less than the average wage, and half of workers earn a wage greater than the average.

(2) Perfect equality implies a Lorenz curve that is
a. horizontal.
b. a 45-degree line.
c. a parabola.
d. a reverse "L" shape.

(3) Since about 1980,
a. the returns to education have increased.
b. the returns to experience have increased.
c. wage inequality has increased within groups of workers with the same education and experience.
d. all of the above.

(4) Expansion of international trade has likely increased the
a. relative demand for unskilled workers in the U.S.
b. relative demand for skilled workers in the U.S.
c. relative supply for unskilled workers in the U.S.
d. relative supply for skilled workers in the U.S.

(5) Mass production technology, such as television, tends to make the distribution of earnings among sports stars
a. more equal.
b. more unequal.
c. Mass production technology has no effect on the distribution of earnings.

(6) The net gain to migration depends positively on
a. wages in the source region.
b. wages in the destination region.
c. moving costs.
d. All of the above.

(7) A "tied mover" is a married worker who
a. prefers to move but instead stays because staying maximizes family income.
b. prefers to stay but instead moves because moving maximizes family income.
c. prefers to move and does so jointly with their spouse to maximize family income.
d. is exactly indifferent between moving and staying, but moves anyway to maximize family income.

(8) Which country probably has a higher return to skills than the U.S.?
a. Germany.
b. Mexico.
c. United Kingdom.
d. Canada.

(9) On average, immigrants who arrived fifty years ago
a. enjoyed higher earnings than native workers as soon as they arrived.
b. eventually overtook native workers in earnings.
c. remained well below native workers in earnings throughout their careers.

(10) Some people argue that "social capital" has an important effect on earnings. "Social capital" is
a. human capital acquired at public schools.
b. the common education heritage of all citizens.
c. informal learning from role models and peer groups in the neighborhood where one grows up.
d. public infrastructure such as roads, bridges, and public buildings.

(11) Most workers who quit a job
a. take another job immediately at a higher wage.
b. are unemployed for a while, then take another job at a higher wage.
c. take another job immediately at a lower wage.
d. are unemployed for a while, then take another job at a lower wage.

(12) The frequency of quits and layoffs seems to decrease with job seniority because
a. some workers are "movers" and other workers are "stayers."
b. workers with more seniority enjoy returns to specific human capital.
c. both (a) and (b).
d. neither (a) nor (b).

(13) Studies of the price of baseball trading cards provide evidence of
a. employer discrimination against blacks.
b. employee discrimination against blacks.
c. customer discrimination against blacks.
d. None of the above.

(14) Becker's theory of employee discrimination concludes that discrimination
a. decreases wages for the discriminated group.
b. decreases employment for the discriminated group.
c. causes segregation.
d. all of the above.

(15) Suppose an employer receives job applications from a blue worker and a green worker with identical education and experience qualifications. If the employer has experienced more frequent quits by blue workers in the past, the employer may offer the job to the green worker. This would be an example of
a. preference-based employer discrimination.
b. preference-based employee discrimination.
c. preference-based customer discrimination.
d. statistical discrimination.
e. monopsony wage discrimination.

(16) Suppose red workers have less elastic labor supply to an employer than yellow workers. Which group will get the lower wage?
a. The red workers.
b. The yellow workers.
c. Red and yellow workers will get the same wage, assuming they are equally productive.
d. Cannot be determined from the information given.

(17) According to estimates of the Oaxaca decomposition, differences in human capital and region of residence account for
a. almost none of the black-white wage differential.
b. roughly half of the black-white wage differential.
c. most of the black-white wage differential.

(18) The last 50 years have NOT seen an increase in the
a. quantity of schooling of black workers.
b. quality of schooling of black workers.
c. labor-force participation rate of blacks.
d. employment of blacks at firms doing business with the federal government.

(19) If workers at the bottom of the wage distribution drop out of the labor force, then the measured average wage of workers
a. decreases.
b. increases.
c. is not affected.
d. Cannot be determined from information given.

(20) Economic theory would predict that "comparable worth" programs create
a. falling earnings for women.
b. excess labor supply for traditional women's occupations.
c. excess labor demand for traditional women's occupations.
d. increased employment of women.

II. Problems: Insert your answer to each question in the box provided. Show your work and circle your final answers.

(1) [Measuring inequality: 14 pts] Suppose 60% of workers earn $30,000 per year and 40% of workers earn $80,000 per year.
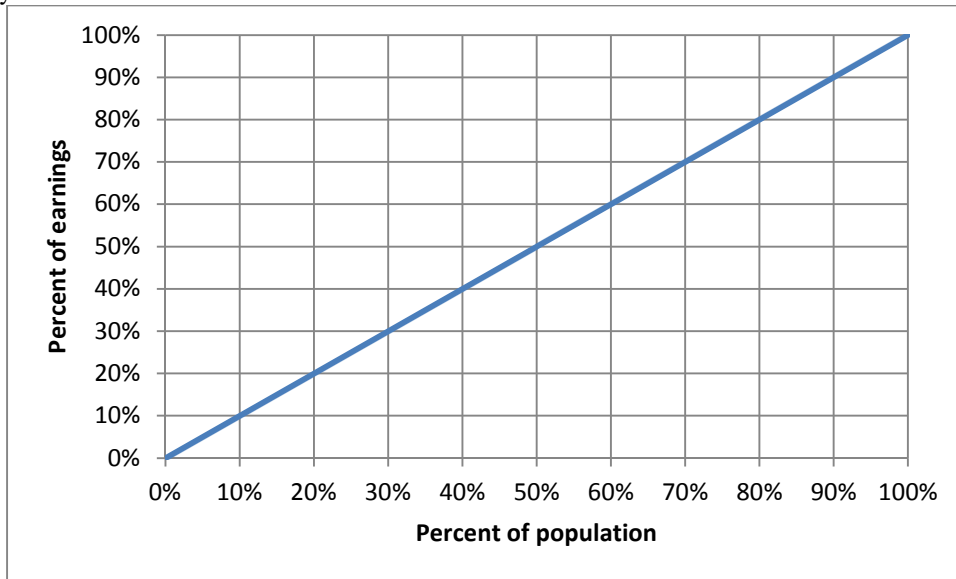
a. [6 pts] Draw the Lorenz curve for earnings in the graph above. Circle any kink points.

b. [2 pts] Compute the Gini coefficient.

c. [2 pts] Compute the 90-50 wage gap.

d. [2 pts] Compute the 50-10 wage gap.

e. [2 pts] Compute the 90-10 wage gap.

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(2) [Migration decision: 8 pts] Suppose a worker with an annual discount rate of 10 percent currently lives in Des Moines, but is considering a move to St. Louis. There are three work periods left in her life cycle. If the worker remains in Des Moines, she will earn $40,000 per year in each of the three periods. If the worker moves to St. Louis, she will earn $50,000 per year in each of the three periods.

a. If the worker's moving cost is $28,000, will she move to St. Louis? Why or why not?

b. What is the worker's highest cost of moving that she will incur and still move to St. Louis?

(3) [Roy model: 4 pts] Country X and Country Y each have workers whose skill (S) ranges from 0 to 100. Suppose the relationship between wages and skill in Country X is given by $w_X = 150 + S$. The relationship in Country Y is given by $w_Y = 30 + 3 S$. Assume there are no moving costs.

a. For what values of S will workers in Country X want to migrate to Country Y?

b. Is this immigrant flow positively or negatively selected?

(4) [Oaxaca decomposition: 6 pts] Suppose that for green workers, the relationship between schooling and the hourly wage is given by $\ln(wage_G) = 1.3 + 0.1 S_G$, while for blue workers, the relationship is $\ln(wage_B) = 1.2 + 0.08 S_B$. On average, green workers have 12 years of schooling, while blue workers have 10 years.

a. Compute the raw log wage differential—that is, $\overline{\ln(wage_G)} - \overline{\ln(wage_B)}$.

b. Compute the log wage differential due to schooling.

c. Compute the log wage differential due to discrimination, in Oaxaca's definition.

(5) [Employer discrimination: 18 pts] Suppose a firm's production function is given by $q = 12\sqrt{E_G + E_B}$, where E_G is the number of green workers employed by the firm and E_B is the number of blue workers employed by the firm. There are no other inputs besides labor. It can be shown that green and blue workers are perfect substitutes in production and that the marginal product of labor (either type) is given by $MP_E = 6/\sqrt{E_G + E_B}$. Suppose the market wage of green workers is $20 and the market wage of blue workers is $10. Also assume the price of the firm's output is $10.

a. Suppose the firm does not discriminate. How many workers will it hire of each type? How much output does it produce? How much profit does it enjoy?

b. Suppose the firm discriminates against blue workers, with a discrimination coefficient of d= 0.2. How many workers will it hire of each type? How much output does it produce? How much profit does it enjoy?

c. Suppose the firm discriminates against blue workers, with a discrimination coefficient of d= 1.2. How many workers will it hire of each type? How much output does it produce? How much profit does it enjoy?

(6) [Household production-possibility curve: 10 pts] Party A can earn $20 per hour in the labor market and can produce 10 units of household services per hour. Party B can earn $10 per hour and can produce 15 units of household services per hour. Each party has 10 hours per day available for paid work or household production.
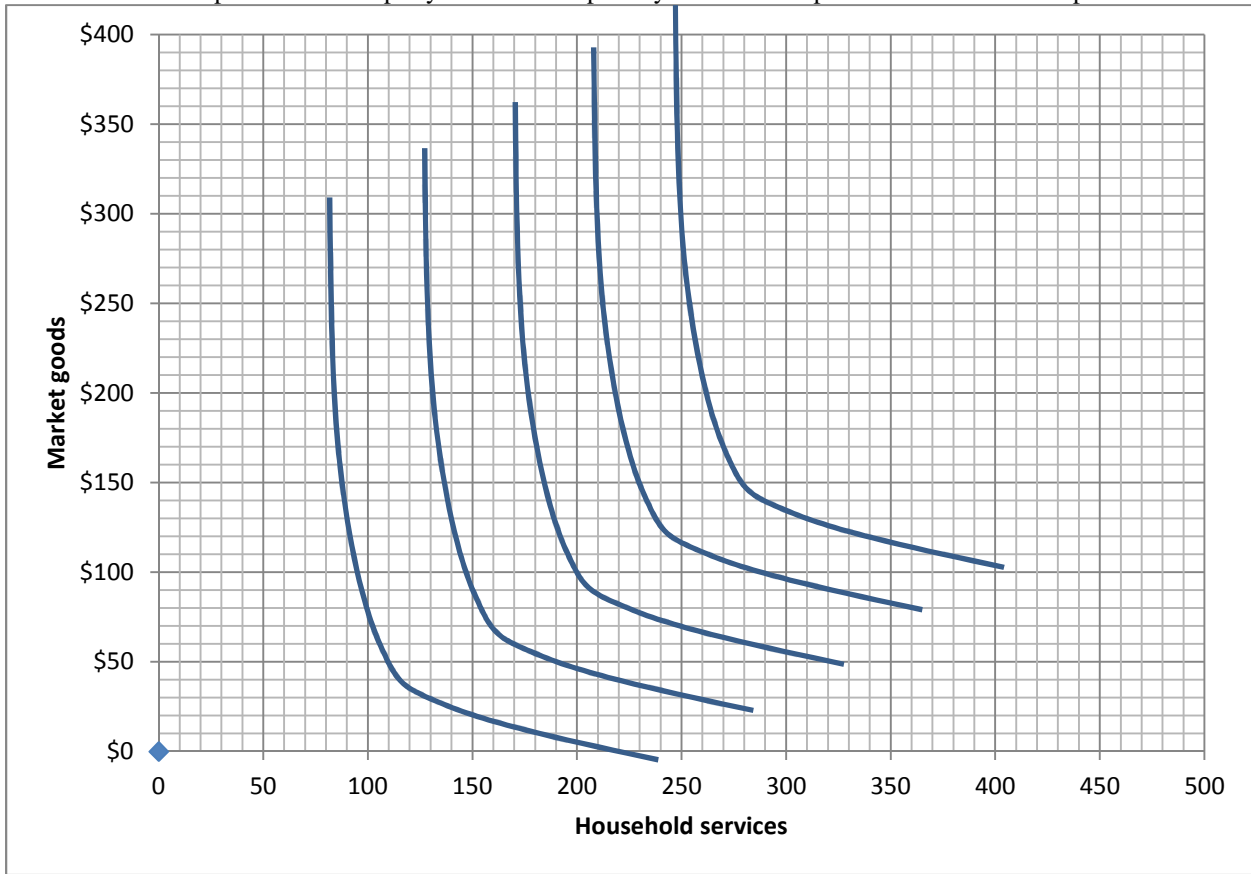
Suppose Party A and Party B form a household. The graph above shows the household's indifference curves.

a. [6 pts] Draw the household's joint production-possibility curve in the graph above. Circle any kink points.

b. [2 pts] How many hours per day will Party A work in the labor market?   hours

c. [2 pts] How many hours per day will Party B work in the labor market?   hours

[end of exam]