

**YOUR NAME:** \_\_\_\_\_

Section I (30 points) Questions 1-10 (3 points each)

Section II (40 points) Questions 11-14 (10 points each)

Section III (30 points) Questions 15

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

1. definition of labor force=

2. name 2 rules of Marshall's (Hicks) derived demand =

3. R-square in a regression=

4. elasticity of substitution (between factor inputs) =

5. non-homothetic production function =

6. capital skill complementarity hypothesis=

7. comparative advantage model of labor supply=

8. quasi-fixed labor cost=

9. Laffer Curve =

10. change in demand vs. change in quantity demanded =

Section II. Assorted Questions

11. Indicate whether the following statement is True, False, or Uncertain. Explain why. You are graded only for your explanation: “Any program, like the earned income tax credit (discussed extensively at the end of chapter 2 in Borjas) that induces more workers into employment will increase total hours of work in the US.”

12. Indicate whether the following statement is True, False, or Uncertain. Explain why. You are graded only for your explanation: “Suppose that there is a technological shock in a competitive industry such that twice as much output can be produced than before for each level of labor input. This will decrease the demand for labor, only if labor and capital are substitutes in production.”

13. The Yo-Butler corporation produces yo-yos, buying inputs from competitive labor and capital markets. If wages are \$12/hour and the rental on capital (a computer-controlled plastic extruding machine) is \$4/hour, and the production function is

$$\text{yo-yos} = 40 K^{.50} L^{.50}$$

then a) what is the optimal capital-labor ratio?

b) Can we say anything about the optimal number of yo-yos to produce? Why or why not?

14. Briefly describe how labor supply is estimated empirically (chapter 2 in Borjas) and some of the issues associated with labor supply estimates.

15. Derive a simple model of fixed vs. variable costs of employment, using the same notation as in the class notes:

F=fixed costs per hiring one more worker

w=hourly wage rate

h=number of hours of work (per worker)

e=number of employees

C=total costs of employment

And assuming that the production of output generally depends upon number of workers and hours worked:  $\text{output}=f(h,e)$

Describe both the a) budget constraint, and b) isoquants.

c) Using your model, describes what happens to work hours per employee and the number of employees as fixed costs increase.