

INSTRUCTIONS:

1. Answer **ONLY** the specified number of questions from the options provided in each section. Do not answer more than the required number of questions. Each section takes one hour.
2. Your answers must be on the paper provided. No more than one answer per page. Do not answer two questions on the same sheet of paper.
3. If you use more than one sheet of paper for a question, write "Page 1 of 2" and "Page 2 of 2."
4. Write **ONLY** on one side of each sheet. Use only pen. Answers in pencil will be disqualified.
5. Write **---- END ----** at the end of each answer.
6. Write your exam identification number in the upper right-hand corner of each sheet of paper.
7. Write the question number in the upper right-hand corner of each sheet of paper.

Section 3: Applied Economics—Answer Any Two Questions.

3A. (Econ 212: Lombardi) Capital is a common component of growth models. In detail, please explain how capital contributes to economic growth in two different growth models.

3B. (Econ 232: Seshadri) Answer all of the following parts completely:

- (1) What is the Ramsey rule? How would a local government apply the Ramsey rule to promote place-based policies?
- (2) Discuss the costs and benefits of place-based policies. You may use a specific case study to answer this part.
- (3) Pick any model of taxation and explain the short term and long-term impact of corporate taxes. How does an open economy impact corporate taxes?

3C. (Econ 221: Lombardi) Assume we start in an equilibrium where two firms compete and have equal marginal costs. Now suppose one of the firms innovates and lowers their marginal cost. In detail, please explain how the change affects each of the firms' behavior (i.e., their price, quantity, etc.) and the market equilibrium.

Repeat the above thought experiment for three market types: Cournot, Bertrand, and perfectly competitive. Note: For the perfectly competitive market, you can treat it as one innovator (i.e., the firm with a lower marginal cost) versus all the other firms.

3D. (Econ 251: Deyo) Your friend Jenna is starting a calzone restaurant, the Low Cal Calzone Zone, and asks you, her economist friend, to help her optimize production. The production function for calzones is $Q=10K^{0.4}L^{0.6}$, where Q = calzones, K = hours of capital use and L = hours of labor use.

1. State and explain the optimal ratio of labor and capital when the wage rate is \$12 and the rental price of capital is \$10. How much does it cost to produce 1,000 calzones?
2. After the Low Cal Calzone Zone opens, the city passes a binding *maximum* wage of \$10 per hour for all restaurant employees. State and explain the new cost-minimizing capital-labor ratio. Illustrate the change graphically with isocost curves.
3. What are some unintended consequences of the maximum wage law? What challenges might Jenna face? How might this affect employment and the decision to work of employees? Be sure to make reference to the literature in your answer.

(over)