

**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: Brady and Lombardi) Distinguish carefully between extensive growth and intensive growth, and between Smithian growth and Promethean growth. Describe and contrast specific examples of both Smithian growth and Promethean growth in the *developing* world, either during the period since 1950 or a shorter period within that era.

**3B.** (Econ 236: Pogodzinski) Transportation costs play a central role in international economics. In the gravity model of international trade, transportation costs (proxied by distance) are one of two central forces determining the level of trade between two countries. In the New International Economics model of Krugman (in *Geography and Trade*), transportation costs are balanced against scale economies to determine the concentration of firms in a location. In *The Great Convergence*, Baldwin associates both the “First Unbundling” and the “Second Unbundling” with changes in transportation costs (albeit for different aspects of trade). Compare and contrast the role of transportation costs in each of these models. In particular, identify the implications of a change in transportation costs to the level of trade or the pattern of trade or the geographic concentration of industry in each of the three models mentioned above.

(over)

**3C.** (Econ 221: Holian) Consider the following situation. Inverse market demand is given by  $P = 12 - Q$ , where  $P$  is the market price and  $Q$  is total market quantity. Currently there are two firms in the industry with constant marginal cost of four dollars (both firms have total costs given by  $C_i = 4q_i$ , where  $i$  indexes firm and  $i \in \{1,2\}$ .) Assume Bertrand competition results when there are two firms in the market. The two firms propose to merge. If they do, the resulting firm will be a monopolist and will set price and quantity to maximize profits, however due to economies of scale total cost of the merged firm will be  $C = q$ , i.e. it will have constant marginal cost of one dollar. Should the merger be allowed? Calculate total surplus both cases, where the merger is and isn't allowed.

**3D.** (Econ 232: Foldvary) Explain how the Clarke Tax used in demand revelation enables a club to reveal the subjective benefits of a collective good and thus enable a benefit-cost calculation as well as compensation for the negative impacts of the choice, and thus provide a social-choice method superior to majority-rule voting.

**3E.** (Econ 251: Deyo) One payment scheme involves employers underpaying and then overpaying its employees. The following questions relate to this model.

**a.** Graphically illustrate the model for this scheme and label *everything*. If the  $MRP_L = 15 + 0.2T$  and  $W = 10 + 0.3T$ , calculate the break-even point in years.

**b.** What are the advantages and issues of the underpayment and overpayment scheme compared to the market wage? Discuss.

**c.** Suppose Congress passes a law dictating a binding *maximum* wage for this market. What are the implications for the supply of labor in this market? What long-run effects can you anticipate? Discuss.

**d.** Suppose instead that the general market for this industry follows the cobweb model. What issues might arise from implementing the underpayment-overpayment scheme in this market?