DEPARTMENT OF ECONOMICS
QUEEN'S UNIVERSITY

ECON239: DEVELOPMENT ECONOMICS

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Final Examination

2 – 5 pm, Friday, April 25, 2008

General Instructions

This exam is THREE HOURS long. There are TWO SECTIONS each of which is worth 50 percent of the overall marks. Section A consists of eight short questions of which you should do five (5). Section B consists of three long questions of which you should do two (2).* Please answer all questions in the answer booklets provided. If you attempt more than the required number of questions in each section make sure you delete the ones that you don't want marked. Hand held calculators are not required.

GOOD LUCK!

* Proctors are unable to respond to queries about the interpretation of exam questions. Do your best to answer exam questions as written.

Section A (50 percent)**:** Discuss the validity of FIVE (5) of the following statements. In your answer define or explain as precisely as possible any terms or concepts which are underlined, with particular reference to the context in which they are being used. The text for each answer should be as concise as possible, but you should include diagrams or examples where appropriate. All questions have equal value.

A1. Privatization of land rights is an appropriate response to the so–called "tragedy of the commons" problem.

A2. Redistributive land reform in developing countries is doomed to failure because there is always a trade–off between equity and efficiency.

A3. When lenders face problems of asymmetric information, rural credit markets may be both inequitable and inefficient.

A4. Group lending schemes can offer a way to mitigate the consequences of adverse selection in rural credit markets.

A5. Permanent labour contracts can be used to provide incentives to rural labourers, but may become increasingly costly for employers if economic growth results in many new alternative sources of employment.

A6. According to the Harris–Todaro model, the best policy approach to reducing the size of the urban informal sector is to expand formal sector employment by, for example, offering tax incentives to employers.

A7. Ricardian trade theory predicts that free trade benefits only those people working in sectors where a country has a comparative advantage.

A8. Export promotion is a more desirable trade policy than import substitution because the former does not result in an over-valued exchange rate.

Section B (50 percent)**:** Answer TWO (2) of the following **Long Questions.** They are of equal value.

B1. Consider the following lending contract between a farmer and a bank, both of whom are risk–neutral. The farmer needs a to borrow an amount L. If she puts in a certain level of effort,the investment will pay off for sure and generate a crop yield y. However, if she "shirks" (i.e. does not put in the effort), the crop yield is uncertain. Specifically, her yield will be y with probability p and 0 with probability $1-p$. The cost of providing the effort is assumed to be c and the gross cost of the funds to the bank is k. The bank must decide what repayment R it will require as part of the contract. Assume that $y > k$ and that the borrower has limited liability.

(a) For a given repayment R, what is the expected income of the borrower if she does not shirk? What is her expected income if she does shirk?

(b) Use your answer to part (a) to derive the maximum repayment R^* that the bank can charge while still inducing borrower not to shirk.

(c) Illustrate on a diagram how the bank's expected profits vary as R is increased from 0 to some value $R > R^*$. If $(1-p)(y-k) < c$, will the bank make the loan ?

Suppose now that two such borrowers form a group and borrow from the bank under a joint liability clause. Assume that $y < 2k$, so that the bank is repaid only if *both* borrowers are successful. Assume also that the borrowers act in unison so as to maximize their joint payoff.

(d) For a given repayment R, what is the expected joint income of the borrowers if they do not shirk? What is their expected joint income if they do shirk?

(e) Show that the maximum repayment, R^{**}, that the bank can charge while still inducing borrowers not to shirk, will always be more than that for an individual contract R^*.

B2. Rural workers in a particular region are paid in a casual labour market according to a piece rate. The relationship between their labour incomes and their productive capacity is described by a standard capacity curve. Assume the workers act so as to maximize their income.

(a) As the piece rate falls from a relatively high level, explain carefully how this will affect the ability of a worker to supply labour effort.

(b) Explain why, when demand for labour is relatively low, involuntary unemployment can exist at the equilibrium piece rate.

(c) Starting with the situation described in **(a)** and **(b)**, imagine that *all* labourers also earn a small amount of non-labour income (e.g. the return on their own savings). Using a diagram, show that the equilibrium piece rate must fall. (Hint: the extra non–labour income implies the workers can provide more effort for a given labour income). Explain the economic intuition for this.

(d) Show that the total income (not just labour income) of employed labour must fall as well. What gives rise to this paradoxical result?

(e) Now suppose that there is a mix of some people with non-labour income and some without. Explain, with the aid of a diagram, why the individuals with non–labour income will always do better than the individuals with no such income. Is your answer consistent with that of part **(d)** ? Explain.

B3. Two large countries — the US and China — produce only two goods: grain and electronics. Modern grain production is relatively capital intensive and electronics is labour intensive. The US is relatively well endowed with capital, whereas China is relatively well endowed with labour. Assume that each society's preferences over the two goods are identical.

(a) Draw an Edgeworth box diagram illustrating the "contract curve" for the US — all the allocations of capital and labour between the two industries such that production is efficient. Carefully explain the shape of this contract curve.

(b) Draw the production possibilities frontier (PPF) for the US. Carefully explain the shape of the PPF. How will the PPF of China differ?

(c) Suppose there is no trade between the two countries. Explain why, in a competitive equilibrium, the relative price of grain must be lower in the US than in China.

(d) Explain why the neoclassical (Hecksher–Ohlin) theory of trade implies there must be an increase in the goods available for consumption in both countries as a result of opening to free trade. Does this imply that all households in each economy will gain from trade? Explain your answer.

(e) Provide a coherent economic argument to justify a protectionist policy in China that imposes a tariff on grain imports from the US. What problems may arise in following such a strategy in the long run?