Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Economics of Development

Spring 2021 Exam 1

Total quiz is 30 points. Each question is worth three points. Each sub question is worth an equal share of these three points.

 1) Exchange rates and trade strategy.

* 1. Illustrate on a supply and demand graph the impact of an overvalued domestic currency on the demand for US dollars where the price is units of domestic currency per dollar, and the supply and demand curves are of US dollars.
	2. Explain how an overvalued currency impacts importers and exporters differently.
1. Growth theories

a) In the graph, k is capital per worker on the x-axis, output per worker is defined as $y=∝k^{β}$ on the y-axis with α capturing total factor productivity and β the share of national income controlled by owners of capital, n is population growth rate, δ is the depreciation rate, and s is the savings rate. Draw lines and points on this figure to identify steady states in k and y for:

*1*) the baseline (α,s) as ($k\_{1}^{\*},y\_{1}^{\*})$,

*2*) after growth due to an increased savings rate (α,s’) as ($k\_{2}^{\*},y\_{2}^{\*})$, and

*3*) after growth from an increase in total factor productivity (α’,s) as ($k\_{3}^{\*},y\_{3}^{\*})$.

b) In class, we discussed the Harrod-Domar model and the Solow model created in reaction to Harrod Domar. Explain how they differ by explaining what each model proposes will lead to positive and potentially constant growth in national income.

3) Circle to indicate whether the statement is true or false.

|  |  |
| --- | --- |
| **Statement** | **Is the statement True or False?** |
| The Harrod-Domar model predicts increasing the average capital stock across all firms in the economy will increase the growth rate of an economy. | True or False |
| Sen states that one of the main themes of the first generation of development economics was the importance of increased agricultural productivity | True or False |
| Neutral technological progress does not change the marginal rate of technical substitution for a given input bundle but does increase the amount of output produced using that input bundle. | True or False |
| Rodrik et al. found that after taking into account variables measuring geographic location and trade openness, the quality of institutions had no statistically significant effect on predicting cross country income differences. | True or False |
| The World Bank categorizes low- and middle- income countries as developing countries. | True or False |
| Debt stock as a % of GNI for developing countries was higher in 2008 than it was in 2018. | True or False |
| The Prebish-Singer hypothesis argues the income elasticity of manufactured goods is higher than the income elasticity of primary products. | True or False |
| Dumping is when a firm that has a multinational production process for a good strategically declares value added amounts in different countries to minimize the overall tax burden. | True or False |

4) More models

Output

The x-axis is labor in one of N sectors of the economy measured in hundreds. 600 workers are currently employed using traditional technology, and they make 600 units, where output is measured in hundreds as well. Each worker is paid 1 per unit of work and each unit of output produced sells for 1 in the traditional sector. The line with the diamond markers is the traditional revenue, cost, and production function. The double line is the modern revenue and production function. It costs the equivalent of 300 workers to bring in the technology, but each worker is more productive with the modern technology than the traditional technology. Possible cost curves reflecting different wages in the modern sector are represented by the dashed lines.

1. What is the name of this model?
2. Will coordination be needed to have all N sectors in the economy modernize if the modern wage is represented by modern wage 1? Why or why not?
3. Will coordination be needed to have all N sectors of the economy modernize if the modern wage is represented by modern wage 2? Why or why not?
4. What is the nature of the spillover benefit to the other N-1 sectors of the economy of the sector represented in the figure modernizing?

5) Hirschman.

* 1. What are forward linkages and backward linkages?
	2. How does the nature of forward and backward linkages support ‘industrialization’ being preferred to ‘agriculture’ in models of structural change in a developing country?

6) There are four workers in the economy who differ in their labor quality as defined by their ‘q’ value. Q is defined on a scale of [0,1] with higher q being higher quality. Worker one has q=1, worker two has q=0.7, worker three has q=0.6, and worker four is q=0.1. Production takes place using two workers, with output of combining workers i and j defined by .

a) Fill in the following

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Combination 1 | Resulting output 1 | Combination 2 | Resulting output 2 | Total output (1+2) |
| (1, 0.7) |  | (0.6, 0.1) |  |  |
| (1, 0.6) |  | (0.7, 0.1) |  |  |
| (1, 0.1) |  | (0.7, 0.6) |  |  |

b) Say production can be increased by paying for training that will increase the q of a given worker. The cost of this training can be expressed in terms of output y. Training that costs .09 units of output y raises the skills of a worker as represented by a 0.10 increase in their q value. As you may recall from class, training will be given to the lower q worker in a given pair so you can just focus on that. Would a firm be willing to pay .09 for the training that will increase the skill level of the 0.7 worker in a (1, 0.7) pairing?

1. Continue with the training details from part b. Would a firm be willing to pay .09 for the training that will increase the skill level of the 0.1 worker in a (0.6, 0.1) pairing?
2. What is the name of this theory and how can it be used to explain a lack of ‘convergence’.
3. Illustrate the following:
	1. Place a tariff on the imported commodity such that the selling price with the tariff is higher than the international price but less than the domestic price if no imports are allowed. Show the level of domestic supply, the level of international supply, and the tax revenue generated. Contrast the closed economy / autarky outcome, the open market outcome, and the tariff outcome. Y axis is price, x axis is quantity.

1. Birxonia workers producers produce 30 syringes and 40 masks per unit of labor. Workers in Faucistan can produce 20 syringes and 30 masks per unit of labor.
	1. If there are 100 laborers in Brixonia and 100 in Faucistan describe the level of production of each commodity in each country in autarky if each country divides up their labor force with half of the work force allocated to each commodity.

|  |  |  |
| --- | --- | --- |
|  | Syringes | Masks |
| Brixonia |  |  |
| Faucistan |  |  |
| TOTAL |  |  |

* 1. Identify the product in which each country has a comparative advantage and explain why this is the product in which they have a comparative advantage.

Brixonia:

Faucistan:

* 1. Move 5 Brixonia workers to the commodity in which they have comparative advantage and 7 Faucistan workers to the commodity in which they have comparative advantage. What levels of each commodity are now produced in each country?

|  |  |  |
| --- | --- | --- |
|  | Syringes | Masks |
| Brixonia |  |  |
| Faucistan |  |  |
| TOTAL |  |  |

* 1. Trade 145 syringes from where syringes have comparative advantage for 205 masks from where masks have comparative advantage. How does the amount of each commodity in each country now compare to what you found in (a)? Why did this happen?

|  |  |  |
| --- | --- | --- |
|  | Syringes | Masks |
| Brixonia |  |  |
| Faucistan |  |  |
| TOTAL |  |  |

1. More Models!!!



* 1. What is the name of this model and what does it describe?
	2. What is the incentive for the workers in the sector represented in the right side of these figures to move to the sector on the left side of these figures?
	3. On the left side of this figure, identify where in this model are the funds to increase from $K\_{M1}$ to $K\_{M2}$ generated.
1. Circle whether the characteristic listed is associated with Williamson’s ‘Washington Consensus’ or the World Bank’s ‘Poverty Reduction Strategy’ approach.

|  |  |
| --- | --- |
| **Characteristic** | **Washington Consensus (WC) or** **Poverty Reduction Strategy (PRS)**  |
| Competitive exchange rates  | WC PRS |
| Comprehensive and results-oriented – focus on outcomes that will benefit the poor.  | WC PRS |
| Country driven  | WC PRS |
| Deregulate to abolish barriers to entry and exit  | WC PRS |
| Fiscal discipline, balanced budgets, control inflation.   | WC PRS |
| Interest rate liberalization  | WC PRS |
| Liberalize FDI inflows  | WC PRS |
| Medium to long term in perspective  | WC PRS |
| Partnership oriented – involving coordinated participation of bilateral, multilateral, NGO, government, and civil society. | WC PRS |
| Privatization of state-owned assets.  | WC PRS |
| Redirect public expenditure to fields with high economic return and potential to improve income distribution.  | WC PRS |
| Secure property rights. | WC PRS |
| Tax reform (lower and broaden)  | WC PRS |
| Trade liberalization  | WC PRS |

Work Page