Econ 20B- Additional Problem Set 3

I. MULTIPLE CHOICES. Choose the one alternative that best completes the statement to answer the question.

1. Over the past century in the United States, real GDP per person has grown by about
   a. 1 percent per year.
   b. 2 percent per year.
   c. 3 percent per year.
   d. 4 percent per year.

2. Which of the following is correct?
   a. Although levels of real GDP per person vary substantially from country to country, the growth rate of real GDP per person is similar across countries.
   b. Productivity is not closely linked to government policies.
   c. The level of real GDP per person is a good gauge of economic prosperity, and the growth rate of real GDP per person is a good gauge of economic progress.
   d. Productivity may be measured by the growth rate of real GDP per person.

3. The average amount of goods and services produced from each hour of a worker's time is called
   a. per capita GDP
   b. per capita GNP
   c. productivity
   d. human capital

4. Productivity is most closely matched with a country's
   a. Level of real GDP.
   b. Level of real GDP divided by hours worked.
   c. Growth rate of real GDP divided by hours worked.
   d. Growth rate of real GDP per person.

5. Cedar Valley Furniture uses 5 workers working 8 hours to produce 80 rocking chairs. What is the productivity of these workers?
   a. 2 chairs per hour.
   b. 1 hour per chair.
   c. 80 chairs.
   d. None of the above is correct.

6. Both Tom and Jerry work eight hours a day. Tom can produce six baskets of goods per hour while Jerry can produce four baskets of the same goods per hour. It follows that Tom's
   a. productivity is greater than Jerry's.
   b. output is greater than Jerry's.
   c. standard of living is higher than Jerry's.
   d. All of the above are correct.

7. Which of the following is a determinant of productivity?
   a. human capital per worker
   b. physical capital per worker
   c. natural resources per worker
   d. All of the above are correct.

8. The equipment and structures available to produce goods and services are called
   a. physical capital.
   b. human capital.
   c. the production function.
   d. technology.

9. Which of the following is considered human capital?
   a. knowledge acquired from early childhood education programs
   b. knowledge acquired from grade school
   c. knowledge acquired from on-the-job training
   d. All of the above are correct.

10. Which of the following lists contains, in this order, natural resources, human capital, and physical capital?
    a. For a restaurant: the land the restaurant was built on, the things the Chef learned at Cooking School, the freezers where the chops and steaks are kept.
    b. For a furniture company: wood, the company cafeteria, saws.
    c. For a railroad: fuel, railroad engines, railroad tracks.
    d. None of the above is correct.

11. In a market economy, scarcity of resources is most clearly reflected in
    a. supply.
    b. demand.
    c. market prices.
    d. the stock of the resource.

12. Which of the following best states economists' understanding of the facts concerning the relationship between natural resources and economic growth?
    a. A country with no or few domestic natural resources is destined to be poor.
    b. Differences in natural resources have virtually no role in explaining differences in standards of living.
    c. Some countries can be rich mostly because of their natural resources and countries without natural resources need not be poor, but can never have very high standards of living.
    d. Abundant domestic natural resources may help make a country rich, but even countries with few natural resources can have high standards of living.

13. Technological knowledge refers to
    a. human capital.
    b. available information on how to produce things.
    c. resources expended transmitting society's understanding to the labor force.
    d. All of the above are technological knowledge.

14. The relationship between the quantity of output created and the quantity of inputs needed to create it is called
    a. the capital accumulation function.
    b. technological knowledge.
    c. the production function.
    d. human capital.

15. Suppose that over the last ten years productivity grew faster in Oceania than in Freedonia and the population of both countries was unchanged.
    a. It follows that real GDP per person must be higher in Oceania than in Freedonia.
    b. It follows that real GDP per person grew faster in Oceania than in Freedonia.
    c. It follows that the standard of living must be higher in Oceania than in Freedonia.
    d. All of the above are correct.

16. Accumulating capital
    a. requires that society sacrifice consumption goods in the present.
    b. allows society to consume more in the present.
    c. decreases saving rates.
    d. has no tradeoffs.

17. Other things equal, relatively poor countries tend to grow
    a. slower than relatively rich countries; this is called the poverty trap.
    b. slower than relatively rich countries; this is called the fall-behind effect.
    c. faster than relatively rich countries; this is called the catch-up effect.
    d. faster than relatively rich countries; this is called the constant-returns-to-scale effect.

18. If an American-based firm opens and operates a new watch factory in Panama, then it is engaging in
    a. foreign portfolio investment.
    b. foreign financial investment.
    c. foreign direct investment.
    d. indirect foreign investment.

19. Suppose that a new government is elected in Tempestia. The new government takes steps toward improving the court system and reducing government corruption. The citizens of Tempestia find these efforts credible and outsiders believe these changes will be effective and long lasting. These changes will probably
    a. raise real GDP per person and productivity in Tempestia.
    b. raise real GDP per person but not productivity in Tempestia.
    c. raise productivity but not real GDP per person in Tempestia.
    d. raise neither productivity nor real GDP per person in Tempestia.

20. Patents turn new ideas into
    a. public goods, and increase the incentive to engage in research.
    b. public goods, but decrease the incentive to engage in research.
    c. private goods, and increase the incentive to engage in research.
    d. private goods, but decrease the incentive to engage in research.

II. CALCULATIONS AND EXPLANATIONS. Compute the numbers and provide explanations when necessary.

21. In 2004, Freedonia had a population of 2,700 and real GDP of about 11,610,000. In 2005 it had a population of 2,500 and real GDP of about 10,000,000. What was the approximate growth rate of real GDP per person in Freedonia between 2004 and 2005?

22. Dilbert's Incorporated produced 5,000,000 units of accounting software in 2004. At the start of 2005 the pointy-haired boss reduced total annual hours of employment from 10,000 to 8,000 and production was 4,800,000. Calculate the productivities of this company in 2004 and 2005 and describe what happened to productivity in this company?

23. Use the data on U.S. real GDP below to compute real GDP per person for each year. Then use these numbers to compute the percentage increase in real GDP per person from 1987 to 2005.

Year	Real GDP (2000 prices)	Population
1987	$6,435,000 million	243 million
2005	$11,092,000 million	296.6 million

III. SHORT ESSAYS. Answer the following questions briefly but concisely.

24. The catch-up effect says that countries with low income can grow faster than countries with higher income. However, in statistical studies that include many diverse countries we do not observe the catch-up-effect unless we control for other variables that affect productivity. Considering the determinants of productivity, list and explain some things that would tend to prohibit or limit a poor country's ability to catch up with the rich ones.

25. List Determinants of productivity [Hint: Y = AF(K, L, H, N)] and provide three policies to encourage productivity by increasing physical capital per worker (K/L).