

Multiple-choice questions. 2 points each.

1. Which of the following will increase when there is a change in prices but not a change in the level of production of goods and services?

- (a) Nominal GDP
- (b) Unemployment
- (c) Labor force
- (d) Real GDP

2. Suppose an economy produces only oranges and apples and experienced the following quantities and prices:

Apples in 2019: Price = \$2.50 Qty = 22
Oranges in 2019: Price = \$2.00 Qty = 18
Apples in 2020: Price = \$2.75 Qty = 24
Oranges in 2020: Price = \$2.15 Qty = 20

Use 2019 as a base year and compute real GDP for 2020.

- (a) \$109
- (b) \$91
- (c) \$100
- (d) \$4.90

3. Suppose an economy produces only oranges and apples and experienced the following quantities and prices:

Apples in 2019: Price = \$1.70 Qty = 27
Oranges in 2019: Price = \$1.50 Qty = 18
Apples in 2020: Price = \$1.85 Qty = 29
Oranges in 2020: Price = \$1.75 Qty = 20

Use 2019 as a base year and compute the inflation rate.

- (a) 8.8%
- (b) 21.6%
- (c) 11.8%
- (d) 2.7%

4. Which of the following is a measure of the aggregate price level in the economy?
- (a) Gross domestic product
 - (b) Nominal GDP
 - (c) GDP deflator
 - (d) Real GDP
5. Frictional unemployment can result from which of the following?
- (a) A persistent mismatch between the skills and characteristics of workers and the requirements of the jobs.
 - (b) A slow down of the economy
 - (c) Rising and falling inflation
 - (d) Normal process of searching for jobs
6. Suppose the working-age population of a fictional economy can be described as follows:
- 15 people are retired
 - 60 have full-time employment
 - 20 have part-time employment
 - 10 are looking for employment but not currently employed
 - 12 would like employment but are not looking for employment because they think no jobs are available

What is the unemployment rate?

- (a) 8.6%
 - (b) 11.1%
 - (c) 21.6%
 - (d) 18.8%
7. Which of the following people would be included in the labor force?
- (a) Someone who was laid off during the recession and isn't looking for jobs because they think no jobs are available.
 - (b) A young person who won the lottery and decided to quit their job and never work again.
 - (c) Someone who lost their job when their business closed and decided to hold off working while they return to school.
 - (d) Someone who was fired for incompetence from their job in a manufacturing plant and is looking for another job.

8. Which of the following is a true description of the substitution effect when there is an increase in wage?
- (a) An increase in wage makes consumption more expensive, so consumers work more and consume less.
 - (b) An increase in wage is an increase in the price of leisure, so consumers decide to enjoy less leisure and more consumption.
 - (c) An increase in wage is an increase in income, so consumers enjoy more leisure and more consumption.
 - (d) An increase in wage makes decreases the price of leisure, so consumers decide to enjoy more leisure and less consumption.
9. If there is a decrease in wages, what is the expected impact on consumption, leisure, and labor supply?
- (a) Consumption, leisure, and labor supply all decrease.
 - (b) Consumption decrease, leisure increases, and labor supply decreases.
 - (c) Consumption is indeterminate, leisure decreases, labor supply increases
 - (d) Consumption decreases, leisure and labor supply are indeterminate.
10. Which of the following causes a parallel outward shift of the budget constraint in the consumption and leisure model?
- (a) Decrease in wages
 - (b) Increase in wages
 - (c) Decrease in firms' profits
 - (d) Decrease in lump-sum taxes
11. As a consumer enjoys more leisure while keeping utility constant, moving rightward and downward along an indifference curve, which of the following is true?
- (a) Marginal utility of leisure and marginal utility consumption both decrease.
 - (b) Marginal utility of leisure increases and marginal utility of consumption decreases.
 - (c) Wage increases
 - (d) Marginal utility of leisure decreases and marginal utility of consumption increases.
12. Which of the following represents the optimal labor demand decision?
- (a) Marginal product of labor = wage
 - (b) $(\text{Marginal utility of leisure})/(\text{Marginal utility of consumption}) = \text{wage}$
 - (c) Marginal product of capital = Marginal product of labor
 - (d) Marginal utility of leisure = wage

13. Which variable(s) are under the control of the representative firm?
- (a) quantity of labor hired
 - (b) quantity of labor hired and the wage
 - (c) quantity of labor hired, wage, and technology
 - (d) wage
14. Which of the following is the objective of the social planner's problem?
- (a) Determine the utility maximizing choice for government expenditures based on production possibilities in the economy.
 - (b) Determine the profit maximizing choices for consumption and leisure based on the wage.
 - (c) Determine the utility maximizing choices for consumption and leisure based on wages, taxes, and profits.
 - (d) Determine the utility maximizing choices for consumption and leisure based on production possibilities in an economy.
15. What is the slope of the production possibilities frontier in the social planner model?
- (a) $-1 * MU_{leisure} / MU_{consumption}$
 - (b) $-1 * MP_{labor}$
 - (c) $-1 * wage$
 - (d) $-1 * MU_{leisure} / MU_{consumption} * wage$
16. Which of the following is a result of a decrease in government expenditures on the socially optimal outcome?
- (a) Increase in consumption, increase in leisure
 - (b) Increase in consumption, no change in leisure
 - (c) Increase in consumption, indeterminate change in leisure
 - (d) Decrease in consumption, decrease in leisure
17. Which of the following is a result of an improvement in technology that increases labor productivity on the socially optimal outcome?
- (a) Increase in consumption, decrease in leisure
 - (b) Increase in consumption, increase in leisure
 - (c) Decrease in consumption, indeterminate change in leisure
 - (d) Increase in consumption, indeterminate change in leisure

18. What is the impact of a decrease in the savings rate in the Solow growth model?
- (a) Long-run consumption increases and long-run capital increases
 - (b) Long-run capital increases and output increases
 - (c) Long-run capital decreases and output decreases
 - (d) Long run capital decreases and output increases
19. Suppose there is a decrease in the population growth rate. Which of the following is a prediction of the Solow growth model?
- (a) An increase in both the long-run level of capital per worker and output per worker.
 - (b) A decrease in the long-run level of output per worker.
 - (c) A decrease in the long-run level of capital per worker.
 - (d) A decrease in both the long-run level of capital per worker and the long-run output per worker.
20. Which of the following causes a decrease in output per worker in the Solow growth model?
- (a) Decrease in capital depreciation rate
 - (b) Increase in capital depreciation rate
 - (c) Improvement in technology
 - (d) Decrease in population growth rate
21. Which of the following causes an upward pivot in the curve illustrate the evolution of capital per worker in the Solow growth model?
- (a) Increase in consumption
 - (b) Increase in the labor force
 - (c) Improvement in technology
 - (d) Increase in the capital depreciation rate
22. Which of the following is a prediction of the Solow growth model?
- (a) Growth in output per worker is lower for countries with higher savings rates.
 - (b) Capital stock per worker grows faster with a larger labor force.
 - (c) Poor countries eventually catch up to rich countries
 - (d) Poor countries never catch up to rich countries

Short-answer problem-solving questions. 5 points each.

23. Suppose an economy produces only automobiles and trains and experiences the following quantities and prices:

Automobiles in 2019: Price = \$10,000 Qty = 220

Trains in 2019: Price = \$120,000 Qty = 15

Automobiles in 2020: Price = \$11,000 Qty = 240

Trains in 2020: Price = \$125,000 Qty = 18

Use 2019 as a base year and compute the growth rate of real gross domestic product from 2019-2020.

24. Suppose an economy produces only automobiles and trains and experiences the following quantities and prices:

Automobiles in 2019: Price = \$10,000 Qty = 220

Trains in 2019: Price = \$120,000 Qty = 15

Automobiles in 2020: Price = \$11,000 Qty = 240

Trains in 2020: Price = \$125,000 Qty = 18

Use 2019 as a base year and compute the rate of inflation from 2019-2020.

25. Suppose declines in the stock market leads to a decrease in consumer's non-labor income. Describe and illustrate consumers' optimal choices for consumption, leisure, and labor supply. If any effect is indeterminate, explain why.

26. Suppose there is a decrease in demand for labor which causes a **decrease in the real wage**. Describe and illustrate consumers' optimal choices for consumption, leisure, and labor supply. Also describe and illustrate the income and substitution effects.

27. Suppose there is an improvement in technology that makes labor more productive. Describe and illustrate the impact on producers' decisions for labor demand and production.

28. Suppose there is a **destruction of capital stock that makes labor less productive**. Describe and illustrate the impact on the socially optimal outcomes for consumption, leisure, employment, and real GDP using the social planners' problem. If any effect is indeterminate, explain why.

29. Suppose there is an **increase in the national savings rate**. Describe and illustrate the impact on the long-run level of capital stock per worker and output per worker.

30. Suppose there is an **improvement in technology** which increases worker and capital productivity. Describe and illustrate the impact on the long-run level of capital stock per worker and output per worker.