

**Part I: LRAS**

- 1) The quantity of real GDP supplied at full employment is called
  - A) hypothetical GDP.
  - B) short-run equilibrium GDP.
  - C) potential GDP.
  - D) all of the above.
- 2) At potential GDP
  - A) there is no unemployment but there is not necessarily full employment.
  - B) there is no unemployment and there is full employment.
  - C) unemployment is at its natural rate.
  - D) None of the above are correct.
- 3) The long-run aggregate supply curve is \_\_\_\_ because along it, as prices rise, the money wage rate \_\_\_\_\_.
  - A) vertical; falls
  - B) vertical; rises
  - C) upward sloping; falls
  - D) upward sloping; stays constant
- 4) The long-run aggregate supply curve illustrates the
  - A) relationship of prices with the level of GDP when real GDP equals potential GDP.
  - B) relationship of aggregate supply and aggregate demand.
  - C) amount of products producers offer at various prices when money wages and other resource prices do not change.
  - D) surpluses, shortages and equilibrium level of GDP.
- 5) For movements along the long-run aggregate supply curve,
  - A) potential GDP is dependent on the price level.
  - B) the prices of goods and services change while the prices of productive resources hold steady.
  - C) the price level and the money wage rate change in the same proportion.
  - D) All of the above are correct.

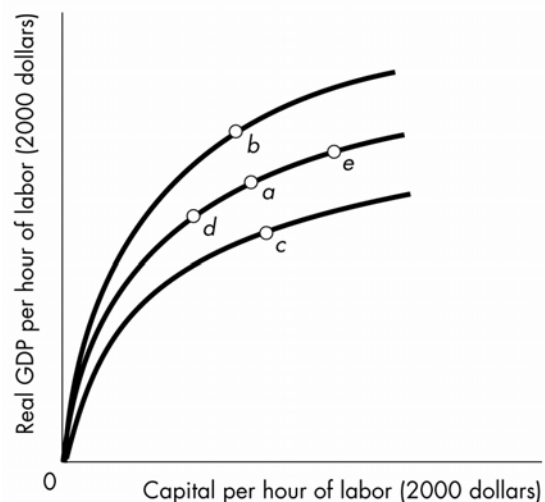
**Part II: Economic Growth**

- 6) Economic growth requires preconditions, which include
  - A) property rights.
  - B) markets.
  - C) a monetary exchange system.
  - D) All of the above answers are correct.
- 7) A basic precondition for economic growth is incentives, provided through
  - A) tax abatements and tax credits
  - B) markets.
  - C) government control of essential industries.
  - D) government control over credit markets.
- 8) Markets are an important precondition for economic growth because markets
  - A) restrict the amount of information flowing to buyers and sellers so that market participants don't get confused.
  - B) limit individuals' abilities to profit from their productive activities and so redirect individual self-interest into socially acceptable channels.
  - C) enable people to specialize and trade.
  - D) all of the above are correct
- 9) Markets provide all of the following benefits to society EXCEPT
  - A) allowing buyers and sellers to acquire information.
  - B) permitting market prices to send signals to buyers and sellers.
  - C) enabling people to specialize.
  - D) eliminating incentives to change the quantities supplied and demanded.
- 10) Property rights are
  - A) social arrangements that govern the ownership, use, and disposal of goods and factors.
  - B) the rights to use money in exchange for goods and services.
  - C) rights that do not include the right to own financial assets.
  - D) rights that include the right to own financial, but not physical, assets.

- 11) An incentive system facilitates economic growth by
- A) rewarding people for specializing in activities in which they have a comparative advantage.
  - B) discouraging investment.
  - C) rewarding people for pursuing high-cost activities.
  - D) discouraging the use of money.
- 12) Labor productivity rises
- A) if the amount of capital per worker increases.
  - B) in the absence of technological progress.
  - C) if firms invest in hiring more workers rather than buying more capital.
  - D) if the amount of capital per worker decreases.
- 13) If capital per worker rises,
- A) labor productivity decreases.
  - B) no technological progress occurs.
  - C) labor productivity increases.
  - D) firms respond by raising their prices.
- 14) The stock of knowledge of a worker is known as
- A) monetary capital.
  - B) human capital.
  - C) physical capital.
  - D) financial capital.
- 15) The more education that workers have, the \_\_\_\_ is their human capital and \_\_\_\_ is their productivity.
- A) larger; higher
  - B) larger; smaller
  - C) smaller; larger
  - D) smaller; smaller
- 16) Which of the following statements regarding human capital is INCORRECT?
- A) Human capital is the accumulated skill and knowledge of human beings.
  - B) Education is the only vehicle for the creation of human capital because training simply reinforces what has already been learned.
  - C) The accumulation of human capital is the source of both increased productivity and technological advance.
  - D) Writing and mathematics, the most basic of human skills, are crucial elements in economic progress.
- 17) The purpose of growth accounting is to determine
- A) how rapidly GDP grows.
  - B) how rapidly the capital stock grows.
  - C) how much of GDP growth is a result of increases in capital, how much is the result of increase in labor, and how much is the result of increases in technology.
  - D) the most accurate ways of measuring depreciation.
- 18) The key tool of growth accounting is the aggregate
- A) demand curve.
  - B) supply curve.
  - C) production function.
  - D) expenditure function.
- 19) The aggregate production function is based upon three main variables:
- A) labor, capital and technology.
  - B) labor, technology and money.
  - C) capital, technology and land.
  - D) land, labor and laws.
- 20) The equation  $Y = F(L, K, T)$  where  $Y$  = real GDP,  $L$  = labor,  $K$  = capital, and  $T$  = technology
- A) is known as the labor function.
  - B) is known as the aggregate production function.
  - C) shows that the faster technology grows, the faster real GDP grows.
  - D) Both answers B and C are correct.
- 21) Labor productivity is measured by
- A) real GDP.
  - B) capital per hour of labor.
  - C) real GDP per hour of labor.
  - D) real GDP per unit of capital.
- 22) Labor productivity equals
- A)  $Y/L$ .
  - B)  $K/L$ .
  - C)  $T/L$ .
  - D) the percentage change in the labor input  $L$ .

- 23) The productivity curve is a relationship between
- real GDP per hour of labor and capital per hour of labor, with technology held constant.
  - nominal GDP per hour of labor and capital per hour of labor, with technology held constant.
  - real GDP per hour of labor and capital per hour of labor whenever technological growth occurs.
  - capital per hour of labor and technological growth.
- 24) While moving along a fixed productivity curve, what is being held constant?
- capital growth.
  - technological progress.
  - labor growth.
  - None of the above because all the factors given above change when moving along a productivity curve.
- 25) Growth accounting divides the growth of labor productivity into two components, which are
- growth in capital per hour of labor and technological change.
  - real GDP per hour of labor and real GDP per dollar of capital.
  - real GDP per person and the amount of capital per worker.
  - the labor/capital ratio and the price of labor relative to the price of capital.
- 26) The productivity curve shows that an increase in technological progress results in
- an increase in the level of real GDP per hour of labor at any level of capital per hour of labor.
  - no change in the level of real GDP per hour of labor at *any* level of capital per hour of labor.
  - a decrease in the level of real GDP per hour of labor at any level of capital per hour of labor.
  - an increase in the quantity of labor.

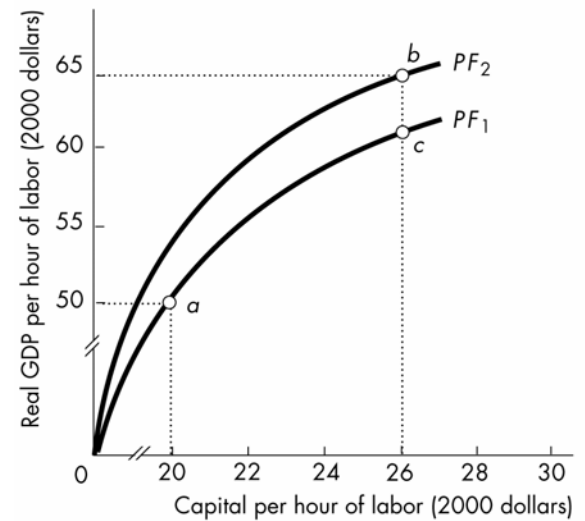
Figure 1



- 27) The curves in **Figure 1** are referred to as
- saving supply curves.
  - productivity curves.
  - labor demand curves.
  - investment demand curves.
- 28) In **Figure 1**, an increase in the capital stock per hour of labor is represented by a movement such as from
- point *a* to point *e*.
  - point *a* to point *b*.
  - point *a* to point *c*.
  - point *a* to point *d*.
- 29) In **Figure 1**, a decrease in the capital stock per hour of labor is represented by movement such as from
- point *a* to point *e*.
  - point *a* to point *b*.
  - point *a* to point *c*.
  - point *a* to point *d*.
- 30) In **Figure 1**, a technological innovation is represented by a movement such as from
- point *a* to point *e*.
  - point *a* to point *b*.
  - point *a* to point *c*.
  - point *a* to point *d*.

- 31) In **Figure 1**, as the amount of capital per hour of labor increases and the economy moves from point *d* to point *a* to point *e*,
- A) real GDP per hour increases at a decreasing rate.
  - B) the law of diminishing returns is violated.
  - C) real GDP per hour decreases at an increasing rate.
  - D) real GDP per hour decreases.
- 32) In **Figure 1**, which of the following best describes the effect of an increase in the quantity of capital per hour of labor?
- A) *A* to *B*.
  - B) *A* to *E*.
  - C) *C* to *D*.
  - D) *C* to *A*.
- 33) The shape of the productivity curve reflects the
- A) effects of capital accumulation.
  - B) effects of technological progress.
  - C) law of diminishing returns.
  - D) effects of population growth.
- 34) The law of diminishing returns states that, as
- A) the quantity of one input used in production increases, all else being the same, output increases.
  - B) technology increases, all else being the same, output increases.
  - C) the quantity of one input used in production increases, all else being the same, output increases by ever larger amounts.
  - D) the quantity of one input used in production increases, all else being the same, output increases by ever smaller amounts.
- 35) According to MIT economist Robert Solow, in the absence of a change in technology, a 1 percent increase in capital per hour of labor
- A) has no significant effect on real GDP per hour of labor.
  - B) brings about a three percent increase in real GDP per hour of labor.
  - C) brings about a 1/3 (0.33 percent) percent increase in real GDP per hour of labor.
  - D) brings about a percentage increase in real GDP per hour of labor equal to the real interest rate.
- 36) According to Robert Solow's one-third rule, if both capital per hour of labor and real GDP per hour of labor grow by 3 percent a year, then we can conclude that
- A) the one-third rule has been violated.
  - B) capital growth contributed one-third of one percent to GDP growth
  - C) technological change contributed 2 percent to growth in GDP per hour of labor.
  - D) most of the growth in GDP per hour of labor was due to growth in capital per hour of labor.
- 37) Assume that capital per hour of labor grows 4 percent and real GDP per hour of labor grows 3 percent. According to the one-third rule, what part of the 3 percent growth of real GDP per hour of labor is attributable to the growth of capital?
- A) 1 percent
  - B) 1.33 percent
  - C) 1.67 percent
  - D) 2.67 percent

**Figure 2**



- 38) In **Figure 2** showing two productivity curves, a decrease in the amount of capital per hour of labor would result in a movement such as from
- a* to *b*.
  - a* to *c*.
  - b* to *c*.
  - c* to *a*.
- 39) Suppose capital per hour of labor increased by 45 percent. Output per hour of labor increased by 35 percent. How much did technology contribute to the growth in GDP per hour of labor?
- 30 percent
  - 20 percent
  - 10 percent
  - 6 percent
- 40) An increase in energy prices could account for the productivity growth slowdown because
- research was devoted to developing energy saving capital goods instead of increasing productivity.
  - higher gas prices reduced saving.
  - research was devoted to developing energy saving capital goods, and thus the productivity curve shifted downward.
  - the capital stock increased as a result of higher energy prices.
- 41) A higher saving rate leads to faster growth because
- more saving produces greater additions to capital per hour of labor, raising output per person.
  - capital would wear out faster.
  - people would consume more of an economy's output.
  - population growth would accelerate.
- 42) If the saving rate increases, a country's growth rate of output per hour of labor \_\_\_\_ and capital per hour of labor \_\_\_\_.
- increases; increases
  - increases; decreases
  - decreases; increases
  - decreases; decreases
- 43) One policy that would increase the saving rate would be
- raising taxes on the returns to saving.
  - raising taxes on the returns to investment.
  - taxing consumption.
  - raising taxes on saving.
- Part III: Classical Growth Theory**
- 44) Which of the following is associated with classical growth theory?
- Growth in real GDP can continue indefinitely.
  - Technological growth increases as the population grows.
  - Population explosions bring real GDP per person back to subsistence levels.
- I.
  - II.
  - III.
  - I and III.
- 45) Classical growth theory asserts that
- an increase in the labor supply raises real wages.
  - the economy can grow indefinitely.
  - real wages fall over time and, as they fall, they increase the population growth rate.
  - population growth is determined by the level of income per person.
- 46) Classical growth theory predicts that
- technological progress increases the demand for labor, driving down real wages, and then population growth rises, driving up real wages to their subsistence level.
  - technological progress decreases the demand for labor.
  - technological progress increases the demand for labor, driving up real wages, and then population growth rises, driving down real wages to their subsistence level.
  - the supply of labor decreases as real wages rise.

- 47) According to the classical growth theory of Thomas Malthus,
- A) labor productivity increases continuously.
  - B) the population growth rate is fixed.
  - C) technological advances lead to permanent increases in real GDP per person.
  - D) increases in real GDP per person are only temporary.
- 48) Population increases are the limiting factor in the growth process in
- A) classical growth theory.
  - B) neoclassical growth theory.
  - C) the new growth theory.
  - D) real growth theory.
- 49) Economics became known as the “Dismal Science” because of the
- A) tendency of competitive markets to keep prices and profits low.
  - B) classical growth theory prediction of subsistence wages in the long run.
  - C) neoclassical growth theory prediction that growth would not persist in the long run.
  - D) trouble students have earning good grades in their Introductory Economics classes.
- 52) Neoclassical growth theory assumes that technological progress
- A) is determined by investment.
  - B) is determined by saving.
  - C) responds to economic incentives.
  - D) is a purely chance event.
- 53) Neoclassical growth theory proposes that
- A) technological progress increases the population growth rate and drives down real wages.
  - B) real GDP per person grows because technological change increases the demand for capital.
  - C) real GDP growth is caused by growth in the population.
  - D) discoveries result from choices that increase profits.
- 54) Neoclassical growth theory assumes the productivity curve exhibits
- A) increasing returns to hours of labor.
  - B) increasing returns to capital per hour of labor.
  - C) diminishing returns to only hours of labor.
  - D) diminishing returns to capital per hour of labor.

#### Part IV: Neoclassical Growth Theory

- 50) According to the neoclassical growth theory,
- A) increases in labor productivity are only temporary.
  - B) technological change depends on people’s choices.
  - C) Forces other than GDP growth determine population growth.
  - D) Higher saving rates generate permanently faster growth in GDP per person.
- 51) If the target interest rate is above the real interest rate,
- A) households increase saving.
  - B) households’ saving is unaffected.
  - C) the demand for capital by firms increases.
  - D) households decrease saving.
- 55) Neoclassical growth theory predicts that
- A) advances in technology increase the productivity of capital, which leads to an increase in investment and rising per capita GDP.
  - B) advances in technology are a result of discoveries motivated by the pursuit of profits.
  - C) growth in real GDP can increase without any increase in investment demand.
  - D) growth in real GDP can continue indefinitely.
- 56) According to neoclassical growth theory, the productivity curve shifts upward if
- A) the target real interest rate increases.
  - B) capital per hour of labor increases.
  - C) technological progress occurs.
  - D) the target real interest rate decreases.

**Part V: New Growth Theory**

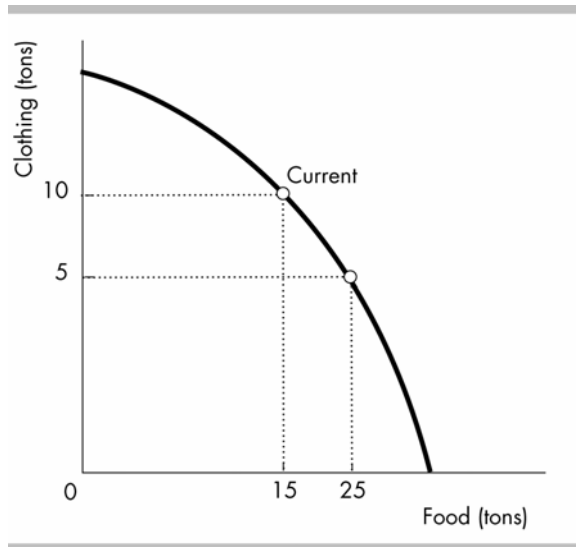
- 57) According to the new growth theory of Paul Romer,
- A) the rate of technological progress is determined by chance.
  - B) knowledge is not subject to diminishing returns.
  - C) the productivity curve does not shift upward over time.
  - D) the concept of a productivity curve is not necessary.
- 58) Which theory emphasizes the significance of new discoveries that can be used by many people at the same time?
- A) Neoclassical growth theory.
  - B) New growth theory.
  - C) Classical growth theory.
  - D) None of the above answers are correct.
- 59) The notion that technological change is not random but instead is driven by the pursuit of profits is an essential element of
- A) classical growth theory.
  - B) neoclassical growth theory.
  - C) the new growth theory.
  - D) perpetual growth theory.
- 60) Because of the choices people make in the pursuit of profit, new growth theory argues that
- A) technology growth slows down in the long-run.
  - B) population growth increases will bring the real wage rate back to subsistence level.
  - C) the capital stock experiences diminishing returns.
  - D) the economy can enjoy a period of indefinite growth.
- 61) New growth theory predicts that
- A) economic growth is only temporary.
  - B) economic growth can last indefinitely.
  - C) economic growth is eroded by changes in taxes.
  - D) government policies can do nothing to foster increased growth.
- 62) Which one of the following statements about growth theories is correct?
- A) In the new growth theory, knowledge is not subject to diminishing returns.
  - B) In neoclassical growth theory, technological progress is the result of rapid increases in saving and investment in capital per person.
  - C) In classical growth theory, real GDP per person is unrelated to the subsistence wage rate.
  - D) In classical growth theory physical resources are unlimited.

**Part VI: PPF**

- 63) The production possibilities frontier is
- A) upward sloping and reflects unlimited choices.
  - B) upward sloping and reflects tradeoffs in choices.
  - C) downward sloping and reflects unlimited choices.
  - D) downward sloping and reflects tradeoffs in choices.
- 64) The production possibilities frontier is the boundary between
- A) those combinations of goods and services that can be produced and those that can be consumed.
  - B) those resources that are limited and those that are unlimited.
  - C) those combinations of goods and services that can be produced and those that cannot.
  - D) those wants that are limited and those that are unlimited.

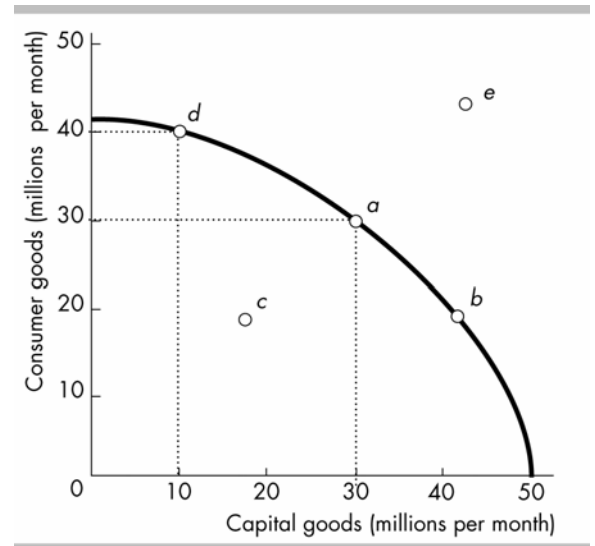
- 65) Jane produces only corn and cloth. Taking account of her preferences for corn and cloth
- A) makes her production possibilities frontier straighter.
  - B) makes her production possibilities frontier steeper.
  - C) makes her production possibilities frontier flatter.
  - D) does not affect her production possibilities frontier.

Figure 3



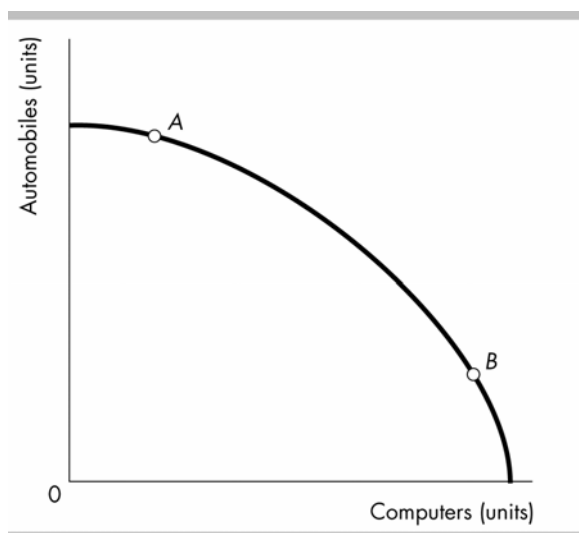
- 66) **Figure 3** illustrates that if this country wishes to move from its current production point (labeled “Current”) and have 10 more tons of food, it can do this by producing
- A) 10 more tons of clothing.
  - B) 10 fewer tons of clothing.
  - C) 5 more tons of clothing.
  - D) 5 fewer tons of clothing.
- 67) A point inside a production possibilities frontier
- A) could indicate that some resources are unemployed.
  - B) is unattainable.
  - C) is more efficient than points on the production possibilities frontier.
  - D) implies that too much capital and not enough labor are being used.

Figure 4



- 68) Refer to the production possibilities frontier in **Figure 4**. Which point indicates that resources are NOT fully utilized or are misallocated?
- A) Point *a*.
  - B) Point *b*.
  - C) Point *c*.
  - D) Point *e*.
- 69) Refer to the production possibilities frontier in **Figure 4**. Which point is unattainable?
- A) Point *a*.
  - B) Point *b*.
  - C) Point *c*.
  - D) Point *e*.
- 70) Refer to the production possibilities frontier in **Figure 4**. Point \_\_\_\_ represents an \_\_\_\_ point.
- A) *b*; unattainable.
  - B) *c*; unattainable.
  - C) *e*; inefficient.
  - D) *c*; inefficient.
- 71) A tradeoff is illustrated by
- A) a point inside the *PPF*.
  - B) a point outside the *PPF*.
  - C) a change in the slope of the *PPF*.
  - D) the negative slope of the *PPF*.

Figure 5



- 72) The bowed outward shape of the production possibilities frontier in **Figure 5** indicates that
- some resources are better suited for producing computers.
  - the opportunity cost of producing more computers decreases as more computers are produced.
  - computer technology is subject to the principle of decreasing costs.
  - All of the above answers are correct.
- 73) According to **Figure 5**, the opportunity cost of producing another computer is
- higher at A.
  - higher at B.
  - the same at every point along the frontier.
  - different at most points along the frontier but equal at points A and B because they are equally distant from the axes.
- 74) The fact that individual productive resources are NOT equally useful in all activities
- implies that a production possibilities frontier will be bowed outward.
  - implies that gain from specialization and trade is unlikely.
  - follows from the law of demand.
  - implies a linear production possibilities frontier.

## Part VII: Long-Run Macroeconomic Equilibrium

## (AD and LRAS)

- 75) Ceteris paribus, the tax rate increases. Which of the following is correct?
- Price level increases, output increases.
  - Price level declines, output declines.
  - Price level declines, no change in output.
  - No change in price level and output.
- 76) Ceteris paribus, the interest rate declines. Which of the following is correct?
- Price level increases, output increases.
  - Price level declines, output declines.
  - Price level increases, no change in output.
  - No change in price level and output.
- 77) Ceteris paribus, there is a technological advancement. Which of the following is correct?
- Price level increases, output increases.
  - Price level declines, output declines.
  - Price level declines, output increases.
  - No change in price level and output.
- 78) Ceteris paribus, there is a technological advancement and a decline in the tax rate. Which of the following is correct?
- Price level increases, output increases.
  - Price level declines, output declines.
  - Price level declines, output increases.
  - Output increases; price level may or may not increase.