LO.a: Calculate and explain gross domestic product (GDP) using expenditure and income approaches.

1. In a simple economy with no foreign sector, the following equations apply:

Consumption function	C = 3,500 - 9 * T
Investment function	I = 700 – 35 * r
Government spending	G = 1,100
Tax function	T = 350 + 2 * r
r: Real interest rate	

If the real interest rate is 2%, the aggregate income will be *closest* to:

A. 1,400.
B. 2,149.
C. 3,500.

2. The following table shows the GDP data of a country measured at market prices (in domestic currency units) for the year 2014:

Consumer spending on goods and services	986,070	Government spending on goods and services	416,700
Business gross fixed investment	397,500	Government gross fixed investment	95,230
Change in inventories	-79,600	Capital consumption allowance	9,650
Transfer payments	9,400	Statistical discrepancy	-3,960
Exports	329,900	Imports	360,990

Using the expenditure approach, the country's gross domestic product (GDP) in 2014 is *closest* to:

A. 1,771,200.
B. 1,780,850.
C. 1,790,500.

3. Which of the following is *most likely* to be included in the measurement of gross domestic product (GDP)?

A. The salary of a local police officer.
B. The value of labor used in commuting.
C. Environmental damage caused by production.

4. Gross domestic product (GDP) can be best described as:

A. the total value of all goods and services produced within the economy.
B. the total income earned by all households, firms, and the government.
C. the total aggregate income earned by all households, all companies, and the government within the economy over a specific time period, usually a year.

5. Which of the following is least likely to be included in the calculation of gross domestic product (GDP)?

A. Income earned by hospitals.
B. Income earned by educational institutes.
C. Environmental damage caused by manufacturing activity.

6. Which of the following will most likely increase the GDP of a country?
   A. An increase in imports.
   B. Increased government transfer payments.
   C. Increased investment in capital goods.

7. Which of the following will most likely be included in China's GDP? The market value of:
   A. Rice grown in China by British citizens.
   B. A phone made in U.S and sold in China.
   C. Films produced outside China by Chinese citizens.

LO.b: Compare the sum-of-value-added and value-of-final-output methods of calculating GDP.

8. Consider a sculpture that is produced and sold in 2014 for $3,000. The expenses involved in producing the sculpture were $1,000. According to the sum-of-value-added method of calculating GDP, the value added by the final step of creating the sculpture was:
   A. $1,000.
   B. $2,000.
   C. $3,000.

9. The following production process details are available for a product:

Cost of raw materials	$10,000
Manufacturing price	$12,000
Wholesale price	$15,000
Retail price	$17,000

   According to the value-of-final-output method of calculating GDP, the amount included in GDP is *closest* to:
   A. $12,000.
   B. $15,000.
   C. $17,000.

10. A piece of jewelry was made and sold in 2014 for $8,000. The expenses involved in hand crafting the jewelry before the final stage amounted to $3,000. According to the 'sum-of-value-added method' of calculating GDP, the value added by the final step of creating the jewelry was:
   A. $3,000.
   B. $5,000.
   C. $8,000.

LO.c: Compare nominal and real GDP and calculate and interpret the GDP deflator.

11. The following data pertains to the total output in units and average selling prices in an economy that produces only two products, A and B:

	Product A		**Product B**	
Year	**Output (units)**	**Selling price/unit**	**Output (units)**	**Selling price/unit**

2013	3,900	$10	3,000	$58
2014	4,100	$11	2,800	$62

The implicit price deflator for GDP in 2013 was 100. The GDP deflator for 2014 is *closest* to:

A. 102.6.
B. 105.5.
C. 107.5.

12. Assume that an economy is composed of two products A and B, whose prices and production details are given below:

Product	**Quantity produced in 2013**	**Quantity produced in 2014**	**Product unit prices in 2013**	**Product unit prices in 2014**
A	250	253	10.5	11
B	149	174	Unknown	6.5

Assuming 2013 is the base year for measuring GDP and the GDP deflator for the economy in 2014 is 103.5, the unit price of B in 2013 is *closest* to:

A. 5.5.
B. 6.5.
C. 7.5.

13. If the GDP deflator values for 2012 and 2014 were 185 and 192.7 respectively, the annual growth rate of the overall price level is *closest* to:

A. 2.06%.
B. 4.16%.
C. 5%.

14. A GDP deflator greater than one *least likely* indicates that an economy has experienced:

A. inflation.
B. deflation.
C. stagflation.

15. Nominal GDP is *best* described as:

A. a measure of total expenditures at current prices.
B. the value of goods and services at base year prices.
C. a measure of total expenditures at base year prices.

16. During the 10 year period from 2000 to 2010, the annual value of Pakistan's final goods and services increased from $75 billion to $150 billion. Over that time period, the GDP deflator increased from 120 to 180. Over the decade, Pakistan's real GDP increased by approximately:

A. 33%.
B. 50%.
C. 100%.

17. The denominator of the GDP price deflator reflects:

A. the value of base year output at current prices.

B. the value of current year output at current prices.
C. the value of current year output at base year prices.

LO.d: Compare GDP, national income, personal income, and personal disposable income.

18. Consider the following data for 2014 for a hypothetical country:

Account name	**Amount ($ trillions)**
Consumption	26.0
Statistical discrepancy	0.4
Capital consumption allowance	1.2
Government spending	6.5
Imports	2.7
Gross private domestic investment	3.0
Exports	2.5

Based only on the given data, the national income for 2014 is *closest* to:
A. 31.7.
B. 33.7.
C. 35.3.

19. Consider the following data for 2014 for a hypothetical country:

Account name	**Amount ($ trillions)**
National income	300.0
Indirect business taxes	17.8
Corporate income taxes	24.2
Undistributed corporate profits	59.6
Transfer payments	18.5
Personal taxes	44.4

Based only on the given data, the personal income for 2014 is *closest* to:
A. 172.5.
B. 198.4.
C. 216.9.

20. Consider the following data for 2014 for a hypothetical country:

Account name	**Amount ($ trillions)**
National income	300.0
Indirect business taxes	17.8
Corporate income taxes	24.2
Undistributed corporate profits	59.6
Transfer payments	18.5
Personal taxes	44.4

Based only on the given data, the personal disposable income is *closest* to:
A. 172.5.

B. 198.4.
C. 216.9.

21. Consider the following data for 2014 for a hypothetical country.

Account name	**Amount ($ trillions)**
Compensation of employees	200.0
Corporate and government profits before taxes	298.6
Interest income	45.6
Unincorporated business net income proprietor's income	32.5
Transfer payments	15.0
Rent	49.5
Indirect business taxes less subsidies	25.5
Statistical discrepancy	1.5

Based only on the given data, the national income is *closest* to:
A. 636.7
B. 650.2
C. 651.7

22. An analyst has gathered the following information about a small country:

Account Name	**Amount (£ million)**
Consumption	30.0
Statistical discrepancy	1.0
Capital consumption allowance	3.0
Government spending	7.6
Imports	3.4
Gross private domestic investment	8.0
Exports	3.0

Based only on the data given, the national income and the gross domestic product are:
A. 41.2 and 45.2.
B. 45.2 and 41.2.
C. 46.2 and 42.2.

23. Which of the following is *most likely* added to national income when calculating personal income from national income for a given year?
A. Transfer payments.
B. Indirect business taxes.
C. Personal consumption expenditures.

LO.e: Explain the fundamental relationship among saving, investment, the fiscal balance, and the trade balance.

24. Two analysts make the following statements:

Analyst 1: A fiscal deficit implies that the private sector must save more than it invests or the country must run a trade deficit.
Analyst 2: A fiscal deficit implies that the private sector must save less than it invests or the country must run a trade deficit.
Which analyst's statement is *most likely* correct?
A. Analyst 1.
B. Analyst 2.
C. None.

25. The fundamental relationship among saving, investment, the fiscal balance and the trade balance implies that the domestic saving must equal:
A. Investment spending + Government deficit - Net exports.
B. Investment spending + Government deficit + Net exports.
C. Investment spending – Government deficit + Net exports.

26. Consider the following data for 2014 for a hypothetical country.

Account name	**Amount ($ trillions)**
Domestic savings	100
Government deficit	56
Net exports	32

Based only on the given data, the investment spending is *closest* to:
A. 12.
B. 24.
C. 80.

27. Consider the following data for 2014 for a hypothetical country.

Account name	**Amount ($ trillions)**
Investment spending	200
Government surplus	16
Net imports	18

Based only on the given data, the domestic saving is *closest* to:
A. 166
B. 200
C. 234

28. Because of a sharp increase in real estate values, the household sector has decreased the fraction of disposable income that it saves. If output and investment spending remain unchanged, which of the following is the *most likely* scenario?
A. A decrease in net exports and increased capital inflow.
B. A decrease in net exports and decreased capital outflow.
C. An increase in net exports and decreased capital outflow.

LO.f: Explain the IS and LM curves and how they combine to generate the aggregate demand curve.

29. The curve that represents combination of income and the real interest rate at which planned expenditure equals income is *most likely* the:
    A. LM curve.
    B. IS curve.
    C. Aggregate demand curve.

30. The curve that represents combinations of income and the interest rate at which the demand for real money balances equals supply is *most likely* the:
    A. IS curve.
    B. LM curve.
    C. Aggregate demand curve.

31. Which of the following *best* describes the relationship depicted by the IS curve?
    A. When interest rates are high, investments rise and therefore income must rise as well.
    B. When interest rates are high, investments fall and therefore income must fall as well.
    C. Interest rates have no impact on the investment and income.

32. Which of the following *best* describes the relationship depicted by the LM curve?
    A. When income increases, the demand for money increases and therefore interest rate must increase as well.
    B. When income increases, the demand for money decreases and therefore interest rate must decrease as well.
    C. Income has no impact on the demand for money and interest rates.

33. Which of the following *best* describes the relationship shown by the AD curve?
    A. When price level decreases, the quantity of goods and services demanded decreases.
    B. When price level decreases, the quantity of goods and services demanded increases.
    C. Price level has no impact on the quantity of goods and services demanded.

34. A decrease in government spending would *most likely* shift the:
    A. IS curve and the LM curve.
    B. IS curve and the aggregate demand curve.
    C. LM curve and the aggregate demand curve.

35. A decrease in the nominal money supply would *most likely* shift the:
    A. IS curve and the LM curve.
    B. IS curve and the aggregate demand curve.
    C. LM curve and the aggregate demand curve.

36. A decrease in the price level would *most likely* shift the:
    A. IS curve.
    B. LM curve.
    C. Aggregate demand curve.

37. As the price level increases along the aggregate demand curve, the interest rate is *most likely* to:
    A. decline.
    B. increase.
    C. remain unchanged.

LO.g: Explain the aggregate supply curve in the short run and long run.

38. Two analysts make the following statements:
    Analyst 1: The short run aggregate supply curve is vertical and the long run aggregate supply curve is upward sloping.
    Analyst 2: The short run aggregate supply curve is upward sloping and the long run aggregate supply curve is vertical.
    Which analyst is *most likely* correct?
    A. Analyst 1.
    B. Analyst 2.
    C. Both.

39. If rents were automatically adjusted for changes in the price level, the short-run aggregate supply curve would *most likely* be:
    A. flatter.
    B. steeper.
    C. unchanged.

40. In the short run, the aggregate supply curve is *best* described as:
    A. flat because the price is more flexible than output in the short run.
    B. flat because output is as flexible as prices in the short run.
    C. upward sloping because input prices do not fully adjust to the price level in the short run.

LO.h: Explain causes of movements along and shifts in aggregate demand and supply curves.

41. The table below presents several combinations of a factor affecting the aggregate demand curve and the associated shift in AD curve. Which of the following relationships is *least accurate*?

	Increase in factor	Shifts the AD curve	Reason
A.	Housing prices	Rightward	Lower investment
B.	Stock prices	Rightward	Higher consumption
C.	Exchange rate	Leftward	Lower exports and higher imports
	*Exchange rate is foreign currency per unit of domestic currency		

42. The short run aggregate supply curve (SRAS) will *most likely* shift to the right due to an increase in:
    A. supply of human capital.
    B. nominal wages.

C. business taxes.

43. The aggregate demand curve will *most likely* shift to the right due to a(n):
    A. boom in the stock market.
    B. increase in taxes.
    C. decrease in real estate values.

44. Which of the following is *most likely* to cause a decrease in aggregate demand?
    A. A weak domestic currency.
    B. A decrease in interest rates.
    C. Expectations of lower inflation rates in the near future.

45. Which of the following is *most likely* to cause the long-run aggregate supply curve to shift to the right?
    A. A decline in productivity.
    B. An increase in productivity.
    C. An increase in corporate taxes.

46. Decreased household wealth will *most likely* cause a decrease in:
    A. household saving.
    B. investment expenditures.
    C. consumption expenditures.

LO.i: Describe how fluctuations in aggregate demand and aggregate supply cause short-run changes in the economy and the business cycle.

47. A decrease in aggregate demand will *least likely*:
    A. lower real GDP.
    B. increase unemployment rate.
    C. raise price level.

48. Which of the following conditions is *least likely* to occur if the economy is in expansion caused by an increase in AD?
    A. Corporate profits will rise.
    B. Commodity prices will decline.
    C. Interest rates will rise.

49. An increase in aggregate supply will *most likely*:
    A. raise real GDP.
    B. increase unemployment rate.
    C. raise price level.

LO.j: Distinguish between the following types of macroeconomic equilibria: long-run full employment, short-run recessionary gap, short-run inflationary gap, and short-run stagflation.

50. Shifts in aggregate demand will *least likely* cause:
    A. a recessionary gap.
    B. an inflationary gap.
    C. stagflation.

51. Which of the following *best* describes a recessionary gap?
    A. Aggregate demand has increased and real GDP is more than potential GDP.
    B. Aggregate demand has decreased and real GDP is less than potential GDP.
    C. Aggregate demand has increased and real GDP is less than potential GDP.

52. If the economy is in an inflationary gap, the short run aggregate supply curve will *most likely*:
    A. decrease.
    B. increase.
    C. remain the same.

53. Which of the following *best* describes an inflationary gap?
    A. Aggregate demand has increased and real GDP is more than potential GDP.
    B. Aggregate demand has decreased and real GDP is less than potential GDP.
    C. Aggregate demand has increased and real GDP is less than potential GDP.

LO.k: Explain how a short-run macroeconomic equilibrium may occur at a level above or below full employment.

54. The government of a country experiencing full employment depreciates its currency in order to reduce a trade deficit. As a result, which of the following will *most likely* cause the country's domestic spending to decline relative to income?
    A. income effect.
    B. substitution effect.
    C. wealth effect.

LO.l: Analyze the effect of combined changes in aggregate supply and demand on the economy.

55. If both aggregate supply and aggregate demand increase, then:
    A. inflation increases.
    B. unemployment decreases.
    C. nominal GDP increases.

56. If both aggregate supply and aggregate demand decrease, then:
    A. real GDP decreases.
    B. employment increases.
    C. inflation increases.

LO.m: Describe sources, measurement, and sustainability of economic growth.

57. The growth of the economy will *least likely* be affected by:
    A. the workforce attending an average of 50 hours of training per year.
    B. an increase in the labor force that is offset by a decrease in the average hours worked per worker, making the total hours worked unchanged.
    C. when capital depreciation exceeds gross investment within the economy.

58. Which of the following is the *most* practical approach to estimate sustainable growth rate?
    A. Weighted average of capital and labor growth rates.
    B. Growth in labor force plus growth of labor productivity.
    C. Growth in total factor productivity plus growth in the capital-to-labor ratio.

59. Which of the following can *least likely* be measured directly?
    A. Potential GDP.
    B. Labor productivity.
    C. Capital productivity.

LO.n: Describe the production function approach to analyzing the sources of economic growth.

60. Consider the following Solow growth accounting equation:
    Potential output growth = 2.0 + 0.8 * Growth of Labor + 0.3 * Growth of capital
    The intercept (2.0) in this equation is *best* interpreted as:
    A. the long-run sustainable growth rate.
    B. the growth rate of total factor productivity
    C. above trend economic growth that is unlikely to be sustained.

61. Consider the following Solow growth accounting equation:
    Potential output growth = 2.0 + 0.8 * Growth of Labor + 0.3 * Growth of capital
    The coefficient on the growth rate of labor (0.8) in this equation is *best* interpreted as:
    A. the labor force participation rate.
    B. the marginal productivity of labor.
    C. the share of income earned by labor.

LO.o: Distinguish between input growth and growth of total factor productivity as components of economic growth.

62. In the neoclassical model, a decrease in total factor productivity reflects a decrease in:
    A. returns to scale.
    B. output for given inputs.
    C. the sustainable growth rate.

63. The main factor affecting economic growth in developed countries is the:
    A. increase in supply of physical capital.
    B. increase in availability of natural resources.
    C. advances in technology.

64. The income differences between emerging market countries and developed countries will converge over time *most likely* due to:
    A. diminishing overall productivity.
    B. diminishing marginal productivity of labor.
    C. diminishing marginal productivity of capital.

Solutions

1. B is correct. With no foreign sector, GDP is calculated as Y = C + I + G
   Y = 3,500 - 9 * T + 700 – 35 * r + 1,100
   Y = 3,500 - 9 * (350 + 2 * r) + 700 – 35 * r + 1,100
   Y = 2150 – 53 * r
   If r = 2%, then Y = 2150 – 53 * 0.02 = 2149.

2. B is correct. Using the expenditures approach:
   GDP = Consumer spending on goods and services + Business gross fixed investment + Change in inventories + Government spending on goods and services + Government gross fixed investment + Exports – Imports + Statistical discrepancy
   GDP = 986,070 + 397,500 – 79,600 + 416,700 + 95,230 + 329,900 – 360,990 – 3,960 = 1,780,850

3. A is correct. The value of labor used in activities not sold in the market (such as commuting) and the by-products of production process that do not have an explicit market value (such as environmental damage caused by production) are excluded from GDP.

4. C is correct. GDP is most appropriately described as the aggregate income earned by all households, all companies, and the government within the economy in a given period of time. Option A is not correct because it does not indicate 'final goods and services'. It also does specify the time period.

5. C is correct. Environmental damages caused by manufacturing activity are by-products, which do not have any explicit market value, so these are not included in GDP.

6. C is correct. Government transfer payments are excluded from GDP. An increase in imports decreases GDP. Investment in capital goods, increases a country's GDP.

7. A is correct. Chinese GDP is the total market value of all final goods and services produced in a given time period within China. The rice was produced in China and counts towards Chinese GDP.

8. B is correct. The value added by the sculptor is $3,000 - $1,000 = $2,000.

9. C is correct. GDP includes only the value of final goods and ignores intermediate goods to avoid double counting.

10. B is correct. The value added by the final step is: $8,000 – $3,000 = $5,000.

11. C is correct.

	Nominal GDP	Real GDP

2013	3,900 * 10 + 3,000 * 58 = 213,000	213,000
2014	4,100 * 11 + 2,800 * 62 = 218,700	4,100 * 10 + 2,800 * 58 = 203,400

GDP deflator = Nominal GDP / Real GDP * 100
= value of current output at current prices/ value of current output at base year prices * 100
= 218,700 / 203,400 * 100 = 107.5

12. B is correct.
Nominal GDP (2014) = 253 * 11 + 174 * 6.5 = 3914
Real GDP (2014) = Nominal GDP / GDP deflator * 100 = 3914/103.5 * 100 = 3781.64
Real GDP (2014) = $P^{A}_{2013} * Q^{A}_{2014} + P^{B}_{2013} * Q^{B}_{2014}$
3781.64 = 10.5 * 253 + P^{B}_{2013} * 174
P^{B}_{2013} = 6.46.

13. A is correct. $(192.7/185)^{1/2} - 1 = 2.06\%$.

14. B is correct. The GDP Deflator = Nominal GDP/Real GDP. To get a ratio greater than 1, nominal GDP exceeds real GDP, which indicates that prices have increased and, accordingly, inflation has occurred. Stagflation refers to a situation where economic growth has stagnated and there is inflation.

15. A is correct. Nominal GDP is described as a measure of total expenditures at current prices.

16. A is correct. Real GDP in the first year was 75/1.2 = 62.5 billion. In the last year it was 150/1.8 = 83.33 billion. (83.33 – 62.5)/62.5 = 0.33 or 33.33%.

17. C is correct. GDP deflator = (Value of current year output at current year prices / the value of current year output at base year prices) *100.

18. B is correct. GDP = Consumption + Gross private domestic investment + Government spending + Exports – Imports
= 26.0 + 3.0 + 6.5 + 2.5 – 2.7 = 35.3.
National income = GDP – CCA – Statistical discrepancy = 35.3 – 1.2 – 0.4 = 33.7

19. C is correct. Personal income = National income – indirect business taxes – Corporate income taxes – Undistributed corporate profits + Transfer payments
= 300.0 – 17.8 – 24.2 – 59.6 + 18.5 = 216.9.

20. A is correct. Personal income = National income – indirect business taxes – Corporate income taxes – Undistributed corporate profits + Transfer payments
= 300.0 – 17.8 – 24.2 – 59.6 + 18.5 = 216.9.
Personal disposable income = Personal income – personal taxes
= 216.9 – 44.4 = 172.5.

21. C is correct. National income = Compensation of employees + Corporate and government profit before taxes + Interest income + Unincorporated business net income proprietor's income + Rent + Indirect business taxes less subsidies
= 200.0 + 298.6 + 45.6 + 32.5 + 49.5 +25.5 = 651.7

22. A is correct. GDP = Consumption + Gross private domestic investment + Government Spending + Exports – Imports = 30 + 8 + 7.6 + 3 - 3.4 = 45.2
National income = GDP – CCA – Statistical discrepancy = 45.2 – 3 – 1 = 41.2

23. A is correct. Personal income = National income − Indirect business taxes − Corporate income taxes − Undistributed corporate profits + Transfer payments.

24. A is correct. A fiscal deficit [(G – T) > 0] implies that the private sector must save more than it invests [(S – I) > 0] or the country must run a trade deficit [(X – M) < 0]

25. B is correct. S = I + (G – T) + (X – M). Savings = Investment spending + Government deficit + Net exports.

26. A is correct. S = I + (G – T) + (X – M). I = 100 – 56 – 32 = 12.

27. A is correct. S = I + (G – T) + (X – M). S = 200 + (-16) + (-18) = 166.

28. B is correct. The fundamental relationship between saving, investment, the fiscal balance, and the trade balance is S = I + (G – T) + (X – M). Given the levels of output and investment spending, a decrease in saving (increase in consumption) must be offset by either a decrease in the fiscal deficit or a decrease in net exports. Decreasing the fiscal deficit is not one of the choices, so a decrease in net exports and corresponding decrease in net capital outflows (decreased lending to foreigners and/or decreased purchases of assets from foreigners) is the correct response.

29. B is correct. The IS curve represents combinations of income and the real interest rate at which planned expenditure equals income.

30. B is correct. The LM curve represents combinations of income and the interest rate at which the demand for real money balances equals the supply.

31. B is correct. IS curve shows an inverse relationship between income and the real interest rate. When interest rates are high, investments fall and therefore income must fall as well.

32. A is correct. The LM curve shows an upward sloping relationship between i and Y. The increase in income causes the demand for money to increase. However, the money supply is unaffected by the increase in income. The only way that money demand and money supply can be equal again is if interest rates also increase to reduce money demand.

33. B is correct. The AD curve depicts an inverse relationship between the price level and real income/output. When price level decreases, the quantity of goods and services demanded increases.

34. B is correct. The IS curve represents the combinations of income and the real interest rate at which planned expenditure equals income. Equivalently, it represents combinations such that S (Y) = I (r) + (G – T) + (X – M), where S (Y) indicates that planned saving is a (increasing) function of income and I (r) indicates that planned investment is a (decreasing) function of the real interest rate.

    To maintain this relationship, a decrease in government spending (G) requires a decrease in saving at any given level of the interest rate (r). This implies a decrease in income (Y) at each interest rate level—a leftward shift of the IS curve. Unless the LM curve is vertical, the IS and LM curves will intersect at a lower level of aggregate expenditure/income. Since the LM curve embodies a constant price level, this implies a decrease in aggregate expenditure at each price level—a leftward shift of the Aggregate Demand curve.

35. C is correct. The LM curve represents the combinations of income and the interest rate at which the demand for real money balances equals the supply. For a given price level, a decrease in the nominal money supply is also a decrease in the real money supply. To decrease the demand for real money balances, either the interest must rise or income must decrease. Therefore, at each level of the interest rate, income (= expenditure) must decrease—a leftward shift of the LM curve.

    Since the IS curve is downward sloping (higher income requires a lower interest rate), a leftward shift in the LM curve means that the IS and LM curves will intersect at a lower level of aggregate expenditure/income. This implies a lower level of aggregate expenditure at each price level—a leftward shift of the Aggregate Demand curve.

36. B is correct. The LM curve represents the combinations of income and the interest rate at which the demand for real money balances equals the supply. For a given nominal money supply, a decrease in the price level implies an increase in the real money supply. To increase the demand for real money balances, either the interest must decrease or income must increase. Therefore, at each level of the interest rate, income (= expenditure) must increase—a rightward shift of the LM curve.

37. B is correct. An increase in the price level decreases the real money supply and shifts the LM curve to the left. Since the IS curve is downward sloping, the IS and LM curves will intersect at a lower level of income and a higher interest rate.

38. B is correct. The short run aggregate supply curve is upward sloping and the long run aggregate supply curve is vertical.

39. B is correct. The slope of the short-run aggregate supply curve reflects the extent to which rents and other input costs adjust to the overall price level. Automatic adjustment of rent

would reduce the impact of price changes on profitability. Hence, the firms would not adjust output as much in response to changing output prices – the SRAS curve would be steeper.

40. C is correct. The short run aggregate supply curve is upward sloping because input prices do not fully adjust to the price level in the short run.

41. A is correct. If housing prices rise, the aggregate demand curve will shift to the right because of higher consumption (wealth effect), not lower investments.

42. A is correct. An increase in the supply of human capital will increase the resource base and cause the SRAS to shift to the right.

43. A is correct. A boom in the stock market increases the value of financial assets and household wealth. An increase in household wealth increases consumer spending and shifts the aggregate demand curve to the right.

44. C is correct. Expectations of lower inflation rates in the near future will entice the household sector to decrease consumption expenditures in the present which decreases the aggregate demand.

45. B is correct. An increase in productivity shifts the long-run aggregate supply curve to the right.

46. C is correct. As asset values decrease, consumers save more and spend less out of current income since they will not be able to meet their wealth accumulation goals. Therefore, a decrease in household wealth results in a leftward shift in the aggregate demand curve.

47. C is correct. A decrease in AD lowers real GDP, increases the unemployment rate and decreases the price level.

48. B is correct. If the economy is in expansion caused by an increase in AD, then commodity prices will increase.

49. A is correct. An increase in AS raises real GDP, lowers the unemployment rate and the aggregate level of prices.

50. C is correct. A right-shift in aggregate demand can result in an inflationary gap. A left-shift in aggregate demand can result in a recessionary gap. Stagflation is most likely caused due to a sudden change in short-run aggregate supply.

51. B is correct. When aggregate demand has decreased it is referred to as a recessionary gap because the real GDP is less than potential GDP.

52. A is correct. In an inflationary gap, there is an upward pressure on input prices. As input prices increase, SRAS decreases.

53. A is correct. When aggregate demand has increased, it is referred to as an inflationary gap because the real GDP is more than the potential GDP.

54. C is correct. At full employment, a weaker currency reduces the purchasing power of all domestic currency denominated assets. Households respond by reducing general expenditures and increasing savings. This is known as the wealth effect.

55. B is correct. Higher aggregate demand and higher aggregate supply raise real GDP and lower unemployment.

56. A is correct. Lower aggregate demand and lower aggregate supply lower the real GDP.

57. B is correct. The total hours worked remains unchanged so the growth of the economy will not change.

58. B is correct. Output growth is equal to the growth rate of labor force plus the growth rate of labor productivity i.e. output per worker. Unlike total factor productivity, output per worker is observable, so this is the most practical way to approach estimation of sustainable growth rate.

59. A is correct. Labor and capital productivity can be measured directly.

60. B is correct. The intercept is the growth rate of total factor productivity.

61. C is correct. In the standard Solow growth accounting equation, the coefficient on each factor's growth rate is its share of income.

62. B is correct. TFP is a scale factor primarily reflecting technology. A decrease in TFP implies the output decreases for any level of factor inputs.

63. C is correct. Technology is the main factor affecting economic growth in developed countries.

64. C is correct. The benefit of an additional unit of capital in emerging market countries is much higher than the benefit of an additional unit of capital in developed countries. This is because developed countries have a much higher level of capital relative to emerging market countries.