Economics

for the IB DIPLOMA

ANSWERS

HODDER EDUCATION
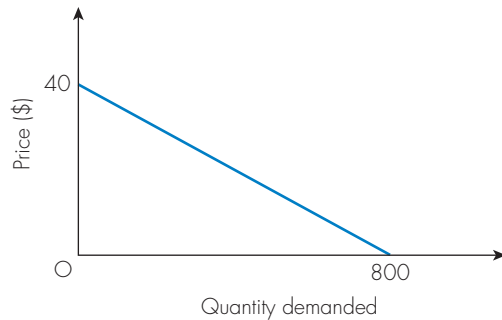
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Exam practice answers

Section 1 Microeconomics

1 First, calculate the intercepts on the x-axis and y-axis

The intercept on the y-axis (price) $= \dfrac{800}{25} = \$32$

The intercept on the x-axis (quantity) occurs when $P = 0$, i.e. $Q_d = 800$ units

Join these two points with a ruler to get your demand curve

2 To find the gradient (slope) of the demand curve, divide 800 by $20 = 40$

When $P = 0$, quantity demanded $= 800$

Hence, the demand function is $Q_d = 800 - 40P$

3 First, calculate the intercept on the y-axis (price)

The intercept on the y-axis $= \dfrac{100}{10} = \$10$, where zero output is supplied

Choose another (higher) price, say \$30, and substitute into the equation $= -100 + 10 (\$30) = 200$ units

Join these two points with a ruler to get your supply curve

Note: the intercept on the x-axis (quantity supplied) occurs when $P = 0$, i.e. $Q_d = -100$ *units*, but it is not necessary to draw negative 100 units of output on a supply curve.
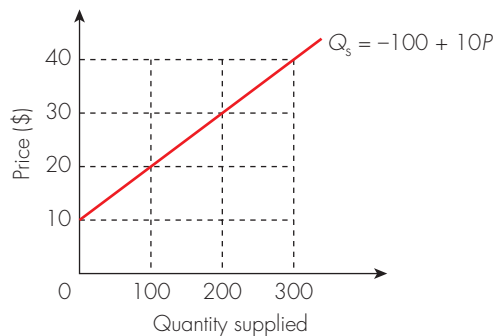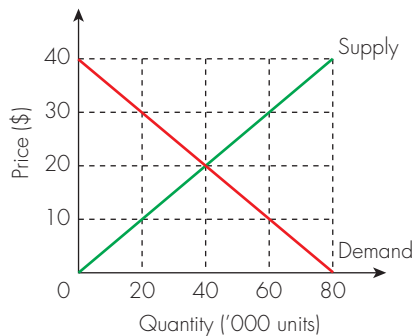

4 $600 - 3P = -100 + 2P$

So, $700 = 5P$

Hence, equilibrium price $= \dfrac{700}{5} = \$140$

And equilibrium quantity traded $= 600 - 3(140) = 180$ units

5 a Substitute values of P into the linear equations to give the following (note, only two points are required to draw the linear demand and supply curves).

P($)	Q$_d$(000)	Q$_s$(000)
0	80	0
10	60	20
20	40	40
30	20	60
40	0	80

b From the graph, it can be seen that:
- if price is $10, demand = 60,000 and supply = 20,000, so there is excess demand of 40,000 units
- at a price of $40, demand = 0 and supply = 80,000, so there is excess supply of 80,000 units

6 a Consumer surplus $= \dfrac{(8-4)\times 2000}{2} = \$4000$

b Producer surplus $= \dfrac{(4-0)\times 2000}{2} = \$4000$

c Excess demand or supply at $6: at $6, demand = 1000 cans whilst supply = 3000 cans, i.e. there is excess supply of 2000 cans

d Excess demand or supply at $2: at $2, demand = 3000 cans whilst supply = 1000 cans, i.e. there is excess demand of 2000 cans

7 These commodities lack real substitutes and are essential products for output. Hence, their PED value is relatively low, i.e. price inelastic or unresponsive to changes in price. By contrast, the PED for manufactured goods is relatively high because there are far more substitutes available for customers to choose from.

8 The percentage change in quantity demanded $= \dfrac{30-25}{25} = 20\%$

The percentage change in price $= \dfrac{350-400}{400} = -12.5\%$

Hence the PED $= \dfrac{20}{12.5} = 1.6$

This means the demand for the earrings is price elastic, i.e. customers are highly responsive to the change in price. The fall in price (12.5%) led to a greater than proportional increase (20%) in the quantity demanded.

9 First, calculate the percentage change in the quantity demanded, i.e. demand falls by 10% from 50,000 to 45,000 match tickets per week

Next, calculate the percentage change in the price of match tickets, i.e. prices increased by 20% from $50 to $60 per match ticket

Then, substitute these figures into the PED formula to give: $\dfrac{-10}{+20} = -0.5$

As the PED for match tickets is less than 1 (ignoring the minus sign), the demand for match tickets is price inelastic, i.e. football fans are not very

responsive to the increase in match ticket prices. Subsequently, there is a smaller fall in the quantity demanded compared with the price rise.

10 The percentage change in quantity demanded $= \dfrac{200 - 225}{225} \times 100 = -11.1\%$

The percentage change in price $= \dfrac{26.95 - 24.5}{24.5} \times 100 = +10\%$

Thus, $\text{XED} = \dfrac{-11.1\%}{+10\%} = -1.11$, i.e. they are considered to be strong complements.

11 It is likely that a rise in the price of private transport will cause a small increase in the demand for public transportation, *ceteris paribus*. This is because they are weak substitutes — at least in the short run.

Note: the scenario will differ from one country to another and examiners will bear this in mind so long as you explain the reason(s) behind your answer.

12 $\text{XED} = -\dfrac{10\%}{-8\%} = +1.25$ (i.e. Coca-Cola and Pepsi are strong substitutes)

13 The YED is known to be −0.25 whilst income has increased

This means demand must have fallen

Substitute the known values into the YED formula gives: $\dfrac{x}{+3\%} = -0.25$

Hence, $x = -0.75\%$, i.e. the demand for sausages has fallen by 0.75%

14 The percentage change in quantity supplied $= \dfrac{10,500 - 10,000}{10,000} \times 100 = +5\%$

The percentage change in price $= \dfrac{\$2.20 - \$2.0}{\$2.0} \times 100 = +10\%$

Hence, $\text{PES} = \dfrac{5\%}{10\%} = 0.5$, i.e. supply is price inelastic

15 The supply curve of supplying *Angry Birds* games is perfectly price elastic because *Rovio* can supply an extra unit of output at zero cost (customers simply download the games app) as there is no additional cost of production.
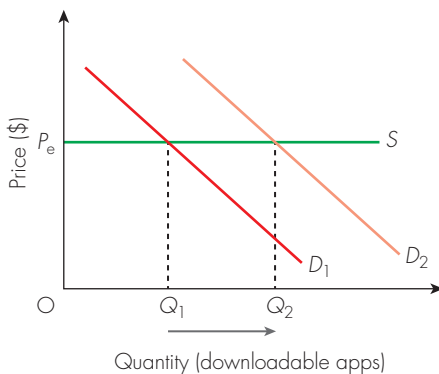
16 % change in price = 10%

% change in output = 20%

Therefore the $\text{PES} = \dfrac{20}{10} = +2.0$, i.e. highly price elastic

17 a Per unit tax = $20 − $10 = $10

Quantity = 30,000

Thus, tax revenue = 30,000 × $10 = $300,000

b Consumers used to pay $15 but now pay $20, i.e. an extra $5 per unit

Equilibrium quantity is now 30,000 units

Therefore, the total tax burden to consumers = 30,000 × $5 = $150,000

c Consumers used to spend $15 × 40,000 units = $600,000

They now spend $20 × 30,000 units = $600,000

Therefore there is no change in total consumer spending after the tax

d The deadweight loss = $\dfrac{(\$20 - \$10) \times (40{,}000 - 30{,}000)}{2} = \$50{,}000$

e The new producer surplus = $\dfrac{(\$20 - \$5) \times 30{,}000}{2} = \$225{,}000$

f Previous consumer surplus = $\dfrac{(\$35 - \$15) \times 40{,}000}{2} = \$400{,}000$

New consumer surplus = $\dfrac{(\$35 - \$20) \times 30{,}000}{2} = \$225{,}000$

Therefore, the change in consumer surplus = $\$400{,}000 - \$225{,}000 = \$175{,}000$

18 a $100 - 5P = 20 + 3P$

$80 = 8P$

Hence $P = \$10$

Substitute this to $Q_s = 20 + 3(10) = 50$ units

Substitute into $Q_d = 100 - 5(10) = 50$ units

Hence, equilibrium price = $10 and equilibrium quantity = 50 units

b Substitute using the supply function: $80 = 20 + 3P$

$60 = 3P$

Hence $P = \$20$

Check: supply = $20 + 3(\$20) = 80$ units

c Use the supply function as the subsidy affects costs of production:

$Q_s = 20 + 3(P + 2.67)$

$Q_s = 20 + 3P + 8$

Hence, the new supply curve = $28 + 3P$

Equilibrium is now: $100 - 5P = 28 + 3P$

$72 = 8P$

$P = \$9$

The new equilibrium quantity is: $Q_d = 100 - 5(9) = 55$ units

Check with supply function: $Q_s = 28 + 3(9) = 55$ units

d Consumers used to spend: $\$10 \times 50 = \$500$

After the subsidy, they spend: $\$9 \times 55 = \$495$

Therefore, consumers spend $5 less than previously (although the increased amount sold is subsidised by the government, of course)

e The per unit subsidy = $2.67 and the equilibrium output is 55 units

Hence, the government spends $\$2.67 \times 55 = \$146.85$

19 a Old consumer surplus = $a + b + c$

New consumer surplus = $a + b + c + d + e + f + g$

Hence, change = $d + e + f + g$

b Producer surplus is now area h only

c The previous revenue = $d + e + f + h + i + j$

The new revenue = $h + i$

Hence, the firm loses areas $d + e + f + j$

The change in revenue is therefore = $-(d + e + f + j)$

d The shortage (excess demand) = $f + g$

20 a At the minimum price of $30, there will be excess supply of 4000 units. This is because at $30, output will be 7000 units whereas demand will only be 3000 units.

**b** Consumers used to spend $\$20 \times 5{,}000$ units $= \$100{,}000$

At the higher price of $30, they now spend only $\$30 \times 3000 = \$90{,}000$

Therefore the change in consumer spending = $-\$10{,}000$

c Producers used to earn $20 × 5000 units = $100,000

At the higher price of $30, they now earn:

□ From consumers: $30 × 3000 = $90,000
□ From the government: $30 × 4000 excess supply = $120,000

Thus, total earnings are now $210,000

Therefore the change in producer revenue = +$110,000

d The total amount spent on buying the excess supply =
$30 × 4000 = $120,000

If the government exports the excess supply, it receives
$20 × 4000 = $80,000

Hence, taxpayers have to pay for the difference, i.e. $40,000

21 Answers could include:

- a definition of market failure
- a definition of negative externalities, consumption or production
- an explanation of congestion zone charging as a form of indirect taxation
- an explanation that the (over)use of motor vehicles in city centres is a case of a negative consumption externalities (private vehicles) or production externalities (commercial vehicles)
- an explanation of the external costs of motor vehicle use, e.g. spillover effects on third parties due to congestion or pollution
- an explanation that the MSB is less than the MPB of consumption or the MSC is greater than the MPC of production
- use of a diagram showing the MSB curve below the MPB curve (negative externalities of consumption) or the MPC curve below the MSC curve (negative externalities of production)
- an explanation showing that the use of congestion zone charging can help to internalise the negative externality of motor vehicle use in city centres
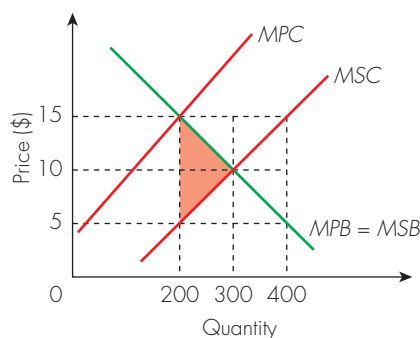
You are not required to use the MSB/MPB approach *and* the MSC/MPC approach for full marks. However, you must correctly label diagrams to be rewarded full marks.

22 Answers could include:

- definitions of merit goods, public goods, and market failure
- explanation that merit goods can be provided in a free market economy but would be under-consumed at market prices despite MSB of consumption > MPB of consumption
- explanation that public goods are under-provided or not provided in a free market economy because they are non-excludable (free-rider problem) and non-rivalrous
- examples of merit goods and public goods
- appropriate diagram(s) to show market failure associated with merit goods and public goods
- explanation that merit goods and public goods have positive externalities, so are under-consumed and under-produced without government intervention

23 Government provision of merit and public goods results in positive externalities (welfare surplus), as shown by the shaded area, equal to

$$\frac{(15-5)\times(300k - 200k)}{2} = \$500,000$$

24 Sales per worker at Sharma Realty $= \dfrac{\$3.95m}{8} = \$493{,}750$ per sales person

Sales per worker at Mintjens Realty $= \dfrac{\$3.8m}{10} = \$380{,}000$ per sales person

Thus, the sales team at Sharma Realty is more productive as the average sales person sells an extra \$113,750 worth of real estate.

Although Sharma Realty has higher productivity as measured by sales per worker, Mintjens Realty might be considered to be more productive as each sales staff sold a greater number of units in the same time:

- Sharma Realty sold 1.25 properties per worker with 8 workers (10 properties sold between 8 sales staff).
- Mintjens Realty sold 1.4 properties per worker in the same time period with 10 workers (14 properties sold between 10 sales staff).

Thus, the choice of measurement of productivity can determine how efficient firms are interpreted to be.

25 a

Labour (number of workers)	Average product	Total product	Marginal product
0	–	0	
			8
1	8	8	
			16
2	12	24	
			21
3	15	45	
			15
4	15	60	
			10
5	12	70	
			−10
6	10	60	

b
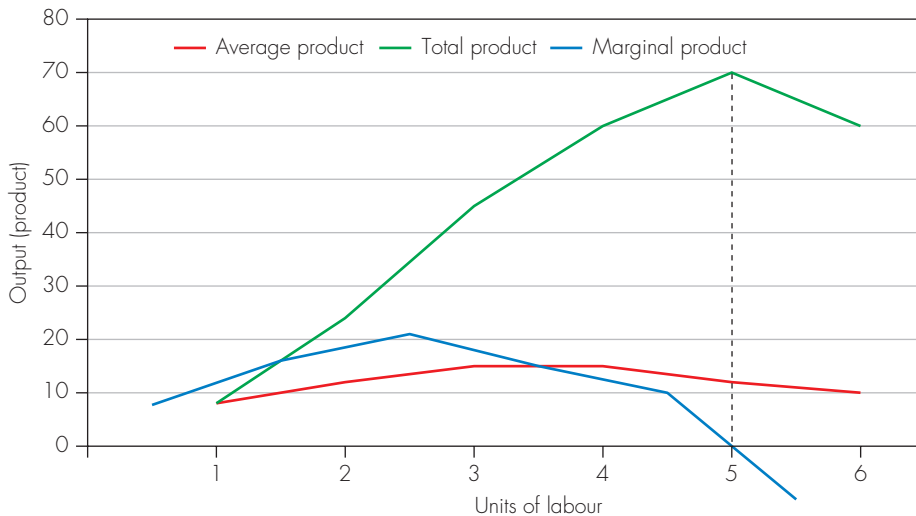
c Total product (of labour) is maximised with the 5th unit of labour (70 units of output from 5 units of input), as shown by the output level where the marginal product of labour is zero.

26 a $TFC = 4545 - 2000 = \$2545$

   b $AFC @ 10 \text{ units} = \dfrac{2545}{10} = \$254.50$

   $AFC @ 15 \text{ units} = \dfrac{2545}{15} = \$169.67$

   c $AVC @ 10 \text{ units} = \dfrac{2000}{10} = \$200.0$

   $AVC @ 15 \text{ units} = \dfrac{2850}{15} = \$190.0$

   d $AC @ 10 \text{ units} = \dfrac{4545}{10} = \$454.50$

   $AC @ 15 \text{ units} = \dfrac{5395}{15} = \$359.67$

   e $MC = \dfrac{\Delta TC}{\Delta Q} = \dfrac{5395 - 4545}{15 - 10} = \dfrac{850}{5} = \$170$

27 a $\dfrac{(\$1.5 \times 4000) + \$4800}{4000} = \$2.70$

   b Break even exists when $TR = TC$

   $BE = \dfrac{\text{fixed cost}}{\text{price} - \text{average variable cost}}$

   $\dfrac{4800}{4 - 1.5} = 1920 \text{ units}$

   c Profit $= [(\$4 - \$1.5) \times 4000] - \$4800 = \$5200$

28 a Total revenue at $\$16 = 16 \times 90 = \$1440$

   b Average revenue = price, so at 120 units of output the $AR = \$8$

   Alternatively, this can be found by the formula:

   $AR = \dfrac{TR}{Q} = \dfrac{\$8 \times 120}{120} = \$8$

   c The difference between areas A and B = marginal revenue from changing the price. If price increases from $\$8$ to $\$12$, the firm gains area A but loses area B, so the difference between the two represents the extra revenue (marginal revenue) following a change in price.

29 a $TVC = \$8 \times 5000 = \$40,000$

   $TFC = \$15,000$

   Hence, $TC = \$55,000$

   b $TR = \$20 \times 5000 = \$100,000$

   As profit $= TR - TC$, $\$100,000 - \$55,000 = \$45,000$

30 a To calculate the break-even price ($P = AR = AC$), you need to know the average total cost of production:

   ■ $AC = \dfrac{TC}{Q} = \dfrac{35,500 + 45,000 + 30,000}{500} = \$221$

   ■ At $\$221$ per unit, the $TR = \$221 \times 500 = \$110,500$ and the $TC = \$110,500$ (seen from the table)

   b To calculate the shut-down price ($P = AVC$), you need to know the average variable cost of production:

   ■ Variable costs = components and materials ($\$35,500$) plus wages ($\$45,000$)

   ■ $TVC = 35,500 + 45,000 = \$80,500$

   ■ $AVC = \dfrac{\$80,500}{500 \text{ units}} = \$161$

31 a The profit-maximising monopolist produces at the output level where $MC = MR$, i.e. OG. The price charged at this level of output, shown on the $AR = D$ curve is therefore OA.

   b The profit-maximising monopolist produces at OG, where $MC = MR$. The average cost here is GD (or OB). Hence, the total cost is shown by the area OGDB.

   c The amount of abnormal profit earned by the profit-maximising monopolist is the difference between its price (OA) and average cost (OB) multiplied by the amount of output (OG). Hence the amount of abnormal profit = ABCD.

   d The revenue-maximising monopolist will supply output at the level where revenue is maximised, i.e. where $MR = O$. Hence, its output level = OH.

32 Answers could include the following:

- definition of monopoly, with appropriate example(s)
- the nature of high barriers to entry
- limited, if any, competition in the industry (no substitutes)
- price inelastic demand for a monopolist's product
- the monopolist being a price maker
- imperfect knowledge in the industry
- an appropriately drawn and explained monopoly diagram showing the abnormal profits

33 Answers are likely to include the following:

- Definitions of product differentiation and monopolistic competition.
- As products are differentiated (not homogeneous), monopolistically competitive firms have some degree of monopoly power, i.e. price setting ability.
- Unlike price-takers, the demand curve of monopolistically competitive firms is not horizontal – they must reduce prices in order to sell more.
- Consumers also have genuine choice between competing firms and therefore price must fall for quantity demanded to increase.
- Appropriately drawn and explained demand diagram.
- You might also consider the high PED of the demand curve for monopolistically competitive firms (since there is a high degree of competition in the industry).

Section 2 Macroeconomics

1 $GDP = C + I + G + (X - M)$

   $GDP = 150 + 60 + 55 + (31 - 28) = \$268$ billion

   Apply the formula GNP = GDP + net income property from abroad

   Hence, GNP = GDP + (−8) = \$260 billion

2   The nominal GDP in 2013 = \$260bn, but the GDP deflator needs to be applied to get the real value of GDP

   Hence, $\dfrac{260}{1.067} = \$243.67$ billion

   Similarly, nominal GDP in 2014 is found by: $\dfrac{262.4}{1.085} = \$241.84$ billion

   Therefore, although nominal GDP increased by \$2.4bn (or by around 0.92%), inflation (of 1.68%) has deflated the real value of GDP (by about 0.75%)

3   The situation can be depicted on an *AD–AS* diagram by a leftward shift of the aggregate demand curve (due to lower consumption, government spending, investments and/or net exports) or the aggregate supply curve (due to the fall in the ability and willingness of firms to supply output during a recession). The recession causes both the level of national output and the general level of prices to decline.

   Up to 2 marks are awarded for drawing a correctly labelled AD–AS diagram. Most answers are likely to feature a shift in the AD curve to the left, although diagrams that show a leftwards shift of the AS curve are acceptable.

   Up to 2 further marks are awarded for an explanation of the change in the short-run equilibrium position of the economy, i.e. a decline in national output and falling price levels.

4 It is likely that both aggregate demand and aggregate supply increase. The cut in income tax boosts consumption due to an increase in household disposable income, *ceteris paribus*. Hence, national output will increase. In addition, the cut in corporation tax will tend to increase profits of firms and hence their ability to increase productive capacity. Depending on the relative size of the shift in *SRAS* and *AD*, the price level may increase or decrease.

Up to 2 marks are awarded for drawing a correctly labelled AD–AS diagram, showing both AD and AS shifting outwards to the right.

Up to 2 further marks are awarded for an explanation of the change in the short run equilibrium position of the economy, i.e. an increase in national output and the impact on the level of price. The scale of these changes will depend on how 'temporary' the tax cuts are applied.

5 Multiplier $= \dfrac{1}{1 - \text{MPC}} = \dfrac{1}{1 - 0.85} = 6.67$

6 National income will increase by $\$200\text{m} \times 2.2 = \$440\,\text{m}$

7 Aggregate demand will fall by $\dfrac{\$85\text{m}}{1 - 0.75} = \$340\text{m}$ at each price level

8 Required government expenditure (injection) $= \Delta G \times (1 - MPC) =$ $92 \times (1 - 0.76) = \$22.08\text{bn}$

9 Total number of people classified as unemployed $= 7.9\%$ of 30 million (not everyone of working age is willing and able to work) $= 2.37$ million

10 First, calculate the size of the labour force:
- Employed population $= 74.8\%$ of 100 million $= 74.8\,\text{m}$
- Unemployed population $= 15\text{m}$
- Labour force $= 74.8\,\text{m} + 15\,\text{m} = 89.8\,\text{m}$

Use this figure to calculate the unemployment rate:
- $\dfrac{15\text{m}}{89.8\text{m}} = 16.7\%$

11 a Possible reasons include the following:
- There are time lags in collecting unemployment data.
- The data collected are only estimates and not exact — Pakistan is one of the world's most populated countries with around 177 million people.
- Unreported or illegal employment activities.
- Different interpretations of 'unemployment' and therefore how it is measured, e.g. are part-time workers unemployed? Does this depend on how 'part time' they are? What is classed as the 'working age' in different countries? The ILO has four different ways to calculate the unemployment rate(!)
- Accept any other relevant reason that is clearly explained.

Up to 2 marks are awarded for each reason that is explained, up to a maximum of 4 marks.

b Consequences of low unemployment for the Pakistani economy include the following:
- Higher rates of economic growth as the employed have greater spending power, thus boosting aggregate demand in the economy.
- Improved standards of living in the economy.
- Increased pressure on the general price level, i.e. inflationary pressures are likely to mount due to the higher levels of employment.
- Wages are likely to rise in response to the higher levels of demand for labour. A shortage of available labour will also tend to raise the average wage rate.
- Accept any other reasonable consequence that is clearly examined.

1–2 marks are awarded for a brief answer that shows limited understanding.

3–4 marks are awarded for an examination that shows some understanding of the possible consequences of low unemployment, although lacks detail in areas or is unbalanced.

5–6 marks are awarded for a detailed and balanced examination of the consequences of low unemployment for the Pakistani economy.

7–8 marks are awarded for a detailed and balanced examination of the consequences of low unemployment for the Pakistani economy, with evidence of evaluation/critical thinking.

12 a Unemployment occurs when people who are willing and able to work, and are actively seeking employment, cannot find a job.

   b The UK government could deal with the mass job losses in various ways, including:

- incentives to retrain staff, e.g. financial assistance offered to supermarkets to retrain their cashiers to work in other departments such as the bakery, delicatessen or stock control
- tax breaks and/or subsidies to encourage businesses to hire new workers
- funding education, retraining and skills training to help the unemployed workers to find employment in other industries
- government spending leading to job creation, e.g. construction and infrastructure

Accept any other method that is clearly examined.

1–2 marks are awarded for a brief answer that shows limited understanding.

3–4 marks are awarded for a clearly explained response that considers two ways to deal with mass unemployment.

13 a The inflation rate is an economic indicator of the cost of living in an economy, as measured by the consumer price index. For example, an inflation rate of 2.5% means that the cost of living for the average household has increased by that amount within the past 12 months.

   b Although the rate of inflation was highest in the first year (2.5%) and lowest in the second year (1.7%), prices were highest in the third year as there has been inflation throughout the period. Although the rate of inflation fell in the second year (disinflation), this only means that prices in general rose at a slower pace but prices were still higher on average.

14

Item	Price index	Statistical weight	Weighted price index
Food and drink	120	10	12
Transportation	130	20	26
Leisure and entertainment	140	30	42
Housing	150	40	60
Consumer price index			140.0

Note that the non-weighted average price index = 135.0 but the weighted index accounts for the relatively higher costs of leisure/entertainment and housing.

Up to 2 marks are awarded for the correct methodology and working out, and a further 1 mark for the correct answer for the weighted price index.

15 The rate of inflation $= \dfrac{129.15}{123} \times 100 = 105$ (or $\dfrac{129-123}{123} \times 100) = 5.0\%$

16 The CPI $= 130 \times 1.03 = 133.9$

17 The inflation rate $= \dfrac{135-125}{125} \times 100 = 8\%$

Hence, the price of the basket $= 1200 \times 1.08 = \$1296$

18 a A consumer prices index (CPI) is used to calculate the rate of inflation using a representative basket of goods and services purchased by a typical household in the country.

   b The weight for housing is 30, so the average household spends 30% of its income on housing costs, and 20% on food. However, it only typically spends 10% of its income on clothing.

c

Item	Price index	Weight	Weighted index
Clothing	110	10	110 × 0.1 = 11
Food	120	20	120 × 0.2 = 24
Housing	130	30	130 × 0.3 = 39
Others	140	40	140 × 0.4 = 56
Weighted RPI	100		130.0

Deduct 1 mark for each error, but apply the *error carried forward* rule as appropriate.

19 a

Year	Inflation rate (%) A	Wage increase (%) B	Real wage increase (%) = B − A
1	2.5	3.0	+0.5
2	3.1	3.5	+0.4
3	2.9	3.1	+0.2

The largest increase in real wages occurred in Year 1 when workers received a 3% pay rise whilst inflation was 2.5%, i.e. the average worker enjoyed a 0.5% real wage rise. Workers received a higher 3.1% nominal pay rise in Year 3 but this is actually worth less (due to the higher rate of inflation at 2.9%) than in Year 1 (when inflation was only 2.5%).

b Despite the wage increase being higher in Year 2 (at 3.5%) than in Year 3 (3.1%), the average wage rate still increased, but by a smaller amount. This is true even in real terms, with real wages increasing by 0.4% in Year 2 but increasing by another 0.2% in Year 3, i.e. average wages have increased albeit by a smaller amount than in the two previous years.

20 a Prices in Iran were generally higher in 2013 than in 2012 because:

- the rate of inflation grew at an increasing rate, from 26.4% in March 2012 to 31.5 by March 2013
- the reduced government subsidies for food and fuel would have caused prices to increase, thereby fuelling inflation in Iran
- the international sanctions imposed on Iran caused depreciation in the value of the rial, causing vitals imports to rise in price (imported inflation).

b Reasons why the Iranian government might aim to control the level of inflation in its economy include the following:

- To maintain price stability in the economy. This can have a large impact on consumer and producer confidence levels, and hence affect the economic wellbeing of the nation.
- Inflation causes an increase in the cost of living, thus creating social hardship for many people if it is not controlled.
- Inflation, if not controlled, can damage the international competitiveness of the Iranian economy.

Accept any other reason that is clearly explained.

Note: you only need to clearly explain two reasons for full marks.

c Some people are likely to have been more affected than others by the double digit inflation rates in Iran because:

- the reduction in the food subsidies, which was a major cause of inflation, would have a greater negative impact on low-income earners
- similarly, the significant fall in real incomes will affect low-income earners more than wealthy members of the Iranian economy
- exporters would find it increasingly difficult to compete on international markets due to the 30%+ inflation rates
- savers would see the real value of their savings decline rapidly
- employers may face increasing pressures from employees for increased wages due to the real decline in their income.

Accept any other reason that is clearly examined.

1–2 marks are awarded for an answer that shows limited understanding.

3–4 marks are awarded for an answer that displays good understanding, although lacks detail in places such as the significance of Iran's double digit inflation rates.

5–6 marks are awarded for a detailed answer that is well balanced and clearly examines how some Iranians are likely to have been more affected than others by the double digit inflation rates.

7–8 marks are awarded for a detailed answer that is well balanced and clearly examines how some Iranians are likely to have been more affected than others by the double digit inflation rates. There is evidence of evaluation/critical thinking.

21 a Deflation is the sustained fall in the general price level in an economy over time, i.e. the inflation rate is negative.

b The graph suggests that Japan has suffered deflation for most of the past 20 years, i.e. all shaded areas below 0% inflation in the graph. For example, Japan suffered deflation between 1999 and early 2004, and again for most parts of 2009–13.

c The impacts of prolonged deflation for the Japanese economy include the following:

- The main cause of prolonged deflation is reduced aggregate demand, with consequences such as cyclical unemployment and lower economic growth.
- Lower prices and lower levels of consumption lead to a decline in company profits. This can also lead to a bankruptcies and a prolonged economic downturn.
- Similarly, investment expenditure is likely to fall, limiting any potential growth in the productive capacity of the Japanese economy.
- Bank lending falls because borrowers would return less in real terms (due to the declining value of money). In addition, interest rates will be low or close to zero (as in the case of Japan) during deflationary periods, which creates further disincentives for banks to lend money.

1–2 marks are awarded for an answer that shows limited understanding.

3–4 marks are awarded for a clear answer that explain the impacts of a prolonged period of deflation for the Japanese economy.

22 a Economic growth is defined as the increase in the level of national output, as measured by the annual percentage change in real gross domestic product (GDP).

b The huge amount of investment taking place in Macau has helped to boost its economic growth because:

- investing huge amounts of money in the country's infrastructure and facilities helps to attract a wider range of tourists, thus boosting its export earnings from foreign visitors
- foreign direct investment, such as the construction of casinos, helps to create jobs, consumer spending and hence economic growth in Macau
- investment itself is a component of aggregate demand, so an increase in investment will tend to increase the level of GDP and hence economic growth
- investment can help to increase the economy's productive capacity (an outwards shift of its PPC). This also helps to improve the economy's productivity and competitiveness, thereby increases Macau's long-term economic growth.

1–2 marks are awarded for a limited answer that shows some understanding. Application is likely to be missing.

3–4 marks are awarded for a clear answer that explains how investment in Macau helps to boost its economic growth.

23 The country uses a proportional tax system as both individuals pay a flat rate of 10% tax on their incomes.

24 a The marginal rate of tax = 20% as this is the rate paid on the last dollar earned from the $40,000.

b The total amount of tax paid on $40,000 total income consists of:

- $0 paid on the first $10,000 (the personal tax allowance or non-taxable income)
- $2000 paid on the next $20,000 at 10%
- $2000 paid on the final $10,000 at 20%

Total tax = $4000

c The average tax rate on $\dfrac{\$4000}{\$40,000} = 10\%$.

d The average rate of tax for the individual earning $80,000 is calculated as follows:

- $10,000 @ 0% = $0
- $20,000 @ 10% = $2000
- $20,000 @ 20% = $4000
- $30,000 @ 30% = $9000
- Total tax paid = $15,000
- Hence, the average tax paid $= \dfrac{\$15,000}{\$80,000} = 18.75\%$

So, despite the second individual earning twice as much as the first individual, the progressive tax system ensures that a higher average rate of tax is paid by those earning higher incomes.

25 Taxable income = $50,000 − $15,000 = $35,000

Tax paid = $35,000 at 20% = $7000

Hence, the average rate of tax paid $= \dfrac{\$7000}{\$50,000} \times 100 = 14\%$

26 The extra amount of tax paid = ($55,000 − $47,000) × 0.45 = $3600

**27** Total income of $35,000 is charged at the following marginal rates of tax:

- $9000 @ 0% = $0
- Next $11,000 @ 10% = $1100
- Next $10,000 @ 20% = $2000
- Remaining $5000 @ 30% = $1500

Hence, the average tax rate paid on a total income of $35,000 is $4600.

28 Answers could include the following:

- Definition of expansionary fiscal policy and aggregate supply.
- An explanation of the various sections of the *SRAS* curve, i.e. perfectly price elastic, upwards sloping and perfectly price inelastic sections of the *SRAS* curve.
- An appropriately drawn and correctly labelled *AD–AS* diagram with explanations of the various sections of an *SRAS* curve:
  - □ Fiscal measures to increase aggregate from AD_1 to AD_2 have no impact on the general level of prices as the economy has spare capacity and unemployed resources, i.e. it is operating along the horizontal section of its *AS* curve.
  - □ Fiscal measures to increase aggregate from AD_2 to AD_3 or AD_4 will increase both the real national output and the general price level as the economy operates along the upwards sloping section of its *SRAS* curve. As this causes some inflation it reduces the effectiveness of expansionary fiscal policy to some extent.
  - □ Fiscal stimulus that expands aggregate demand beyond the productive capacity (full employment) level of the economy (in this case beyond AD_5) is simply inflationary and ineffective in increasing national output.
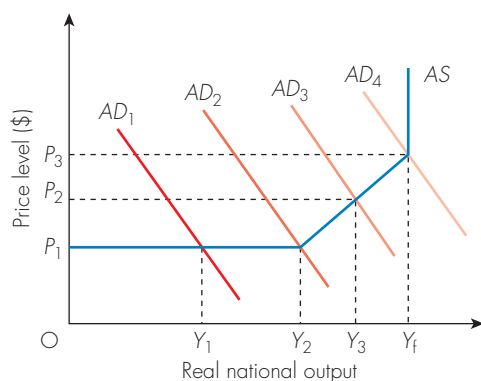
29 Answers could include the following:

- Definition of expansionary fiscal policy and budget deficit.
- Outline of the sources of government revenue (such as from taxation, public-sector enterprises and privatisation proceeds) and types of government spending (current and capital expenditure). Typically, a budget deficit may occur due to capital expenditure, but not for current expenditure.
- Explanation that tax cuts, used to stimulate the economy, result in the government receiving less tax revenue, which can lead to a budget deficit.
- Explanation that increased government spending (on welfare benefits and national defence, for example) depletes the funds in the government's budget, thus risking the budget going into deficit.
- Hence the combination of increased government spending and lower tax revenues will eventually cause a budget deficit for the government, *ceteris paribus*.
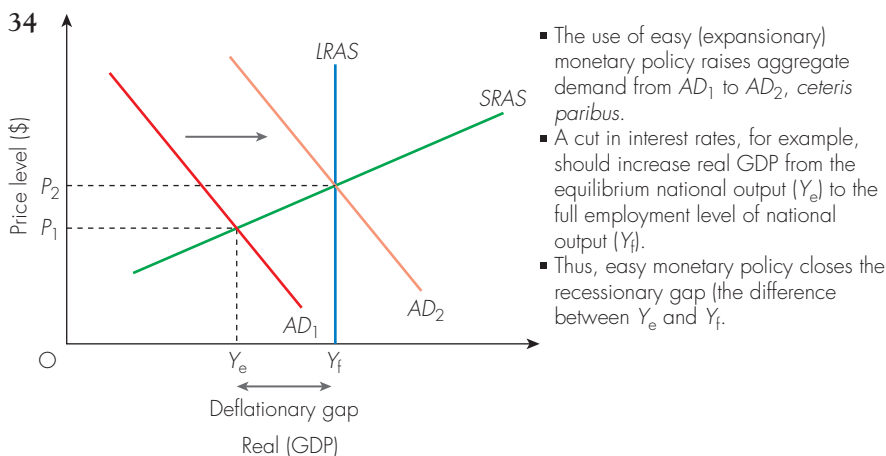
30 Answers could include the following:

- Definition of fiscal policy and aggregate demand.
- Explanation that fiscal policy will directly affect the government spending (G) and consumption (C) components of aggregate demand.
- Depending on where the economy is in its business cycle, fiscal policy can be used to either boost or reduce aggregate demand.
- Explanation of how expansionary fiscal policy can affect the level of *AD*.
- Explanation of how contractionary fiscal policy can affect the level of *AD*.
- Use of appropriate *AD–AS* diagrams to illustrate the impact of fiscal policy on the economy.

31 Answers could include the following:

- Definition of fiscal policy and economic growth.
- Examination of how fiscal policy can be used to promote long-term economic growth, including:
  □ Income tax cuts lead to higher disposable incomes and hence increased consumption in the economy. The effectiveness will depend on several factors such as the scale and scope of the tax cuts and the size of the workforce.
  □ Corporation tax cuts can also help businesses to improve their liquidity position and hence help with job creation in the long term. Lower corporation tax can attract foreign direct investment in the country, thus improving its potential output and international competitiveness.
  □ Increased government spending can stimulate aggregate demand and hence boost economic growth. Again, the scale and scope of the change in government spending will determine the extent to which fiscal policy is effective in achieving long-term economic growth.
- An appropriate *AD–AS* diagram to show how fiscal policy can help to achieve economic growth.
- Explaining how fiscal measures might be (in)effective depending on the phase of the business cycle that the country is currently in.
- Consideration of the shape of the *AS* curve and how this might affect the impact of fiscal policy measures to achieve economic growth.
- Consideration of the limitations of fiscal policy in achieving economic growth.

- Consideration of how monetary policy might be used to complement fiscal policy as demand-management policy instruments to achieve long-term economic growth.
- Consideration of how supply-side policies might be more effective in achieving long-term economic growth.

32 a The main drawback of the low taxes rates in the United Arab Emirates is the lack of tax revenues to fund government spending (e.g. infrastructure, education and healthcare), all of which would benefit firms in the UAE in the long term.

  b China and the UK have a high rate of personal income tax (up to 45% in both countries), compared with just 20% in Singapore and zero income tax in the UAE. In theory, this creates disincentives to work in China and the UK. Similarly, the relatively high rates of sales taxes in these countries can have a negative impact on the level of spending in the UK and China. The lower rates of corporation tax in Singapore and the UAE create a greater attraction for foreign direct investment (FDI) with long-term competitive advantages for the countries.

33 Answers could include the following:

- Definition of monetary policy and economic activity.
- Explanation that increasing interest rates, as part of tight monetary policy, can be used to contract economic activity if there are inflationary pressures (vice versa).
- Explanation that currency appreciation can deflate the economy during times of rapid economic boom and overspending on exports (vice versa).
- Explanation that increasing the money supply during times of economic downturn can help to improve liquidity in the economy (although this may have inflationary effects).
- Explanation that monetary policy is used to control inflation in order to achieve macroeconomic objectives. For example, reducing interest rates to stimulate economic activity means that:
  - □ households and firms with outstanding mortgages have lower interest payments to make, and thus have more disposable income to spend, i.e. consumption increases
  - □ savers have less of an incentive to deposit their money in banks, so are more likely to spend their money; this raises the level of aggregate demand in the economy, *ceteris paribus*
  - □ lower interest rates also tend to lead to a lower exchange rate, thus causing an increase in the demand for the country's exports.
- Appropriate use of an *AD–AS* diagram(s) to show the effects of the above.

34

- The use of easy (expansionary) monetary policy raises aggregate demand from AD_1 to AD_2, *ceteris paribus*.
- A cut in interest rates, for example, should increase real GDP from the equilibrium national output (Y_e) to the full employment level of national output (Y_f).
- Thus, easy monetary policy closes the recessionary gap (the difference between Y_e and Y_f.

35 a At any point in time, the supply of money is predetermined (fixed) by the country's central bank. In this case, irrespective of the interest rate, the fixed amount of money in the economy is Q_1.

    b At a low rate of interest (when the price of money is low), there will be excess demand for money. In the diagram, an interest rate of R_2 shows that $D_m = Q_2$ whilst $S_m = Q_3$ only, thus causing excess demand of $Q_2 - Q_3$ for money.

36 Supply-side policies are the long-term macroeconomic tools used by a government to boost its economy's productive capacity. Examples include education, training, tax reforms, privatisation and deregulation.

Supply-side policies can help to achieve the macroeconomic objectives of a government in several ways, including:

- **Economic growth** – supply-side policies aim to shift the aggregate supply (or production possibility curve) of the economy outwards to the right. This means an increase in its productive capacity and hence prospects for achieving higher levels of national output, thus leading to economic growth.
- **Stable prices** – whilst demand-side policies can boost economic growth, they tend to cause inflationary pressures in the economy. With supply-side policies, national output is able to match any increases in aggregate demand, thus dampening inflationary forces.
- **Low unemployment** – supply-side policies ultimately help to improve the efficiency and competitiveness of firms. Therefore, in the long run, job creation will help the government to achieve its macroeconomic goal of low unemployment.
- **Healthy balance of payments** – as supply-side policies, such as improved education and training, help to increase the international competitiveness of an economy, there is likely to be a boost in export sales and earnings. Thus, this helps to improve the country's balance of payments.

Note: Only *two* macroeconomic objectives should be examined.

1–3 marks are awarded for a brief answer that shows limited understanding. Relevant economic terms may not be defined and there are significant errors/ omissions.

4–6 marks are awarded for an answer that shows some understanding of the demands of the question. Relevant economic terms are defined. Diagrams and examples are applied where appropriate. There are minor errors/omissions.

7–8 marks are awarded for an examination that shows understanding of how supply-side policies help to achieve (any two) macroeconomic objectives. Where appropriate, diagrams and examples are included and applied.

9–10 marks are awarded for a clear and detailed examination of how supply-side policies help to achieve any two macroeconomic objectives. Where appropriate, diagrams and examples are included and applied, with effective use of terminology.

Section 3 International economics

1 **a** With Brunei Darussalam relying on crude oil and natural gas to account for 90% of its GDP, the country is said to be over-specialised. This makes economic conditions in the country very volatile if the world demand for such resources decreases in the future, perhaps in favour of more environmentally friendly fuel sources.

    Another potential problem is the future supply of non-renewable resources such as crude oil and natural gas. The country may struggle to find alternative products that it can export to maintain its standards of living.

    Accept any *one* reason that is clearly explained for full marks.

    b Reasons for countries trading with each other include the following:

- The lack of scarce resources in the domestic country, e.g. Bangladesh does not have sufficient supplies of crude oil and natural gas, whereas Brunei Darussalam does not have the arable land needed to grow rice and tropical fruits.
- It is often cheaper to import products than to produce them domestically, e.g. Sweden could, in theory, grow its own pineapples

and bananas but it would be more economical to purchase these from overseas countries such as Thailand, the Philippines and India.

- International specialisation and trade can benefit consumers as there is more competition, choice and improved quality of products.
- Employment opportunities can also arise from international trade (due to higher rates of economic growth).
- Accept any other reason that is clearly explained.

1–2 marks are awarded for an answer that shows some understanding, or if only one reason is explained.

3–4 marks are awarded for a detailed answer that clearly shows understanding of any two reasons for why countries trade with one another.

c Bangladesh's export of rice and tropical fruits helps its farmers to achieve economies of scale because:

- specialisation allows the exporters to operate on a large scale, and hence enjoy cost-saving benefits
- specialisation also helps to improve productivity (which lowers unit production costs) and quality
- the larger global market also enables Bangladeshi farmers to operate on a larger scale and sell to a much larger market than if they only catered for domestic consumers.

1–2 marks are awarded for an answer that shows some understanding.

3–4 marks are awarded for a detailed answer that clearly shows understanding of how such specialisation helps Bangladeshi farmers to achieve economies of scale.

2 Mayland should specialise in (and export) Aris as it gives up 1 unit of Walkers to gain 4 units of Aris (whereas Farrowland only gains 2.5 units of Aris if it gives up the same unit of Walkers).

Country	Aris (units)	Walkers (units)	Ratio
Farrowland	1500	600	2.5:1
Mayland	2000	500	4.0:1
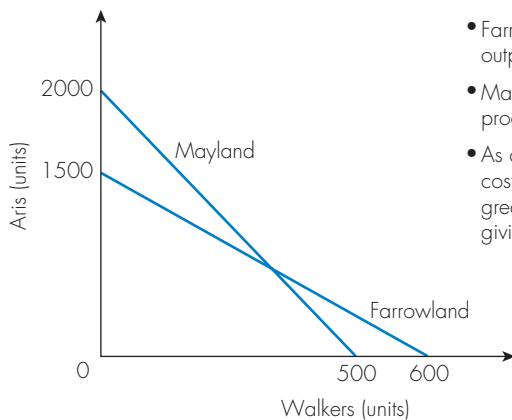
- Farrowland has the absolute advantage in the output of Walkers.
- Mayland has the absolute advantage in the production of Aris.
- As can be seen in the diagram, the opportunity cost of Mayland giving up production of Aris is greater than the opportunity cost of Farrowland giving up production of Walkers.

3 a $\dfrac{(\$350 - \$100) \times 50{,}000}{2} = \$6{,}250{,}000$

b $\dfrac{(\$100 - \$50) \times 10{,}000}{2} = \$250{,}000$

c $\dfrac{(\$350 - \$150) \times 40{,}000}{2} = \$4{,}000{,}000$

d $\dfrac{(\$150 - \$50) \times 20{,}000}{2} = \$1{,}000{,}000$

e $(\$150 - \$100) \times (40{,}000 - 20{,}000) = \$1{,}000{,}000$

f $\dfrac{(\$150 - \$100) \times (20{,}000 - 10{,}000)}{2} + \dfrac{(\$150 - \$100) \times (50{,}000 - 40{,}000)}{2} = 500{,}000$

4 a $a + b + c + d + e + f + g$

b h

c $a + b$

d $c + h$

e ▪ Consumer surplus was $a + b + c + d + e + f + g$ but is now just $a + b$

  ▪ Producer surplus was h but has increased to $h + c$

  ▪ Hence, the welfare loss following the imposition of the quota =
    $d + e + f + g$

5 a $150 million

b 25 million units

c 15 million units

d $300 million

e $150 million

6 a Reasons why countries use trade protection could include:

  ▪ to protect domestic producers against foreign competition (low-cost producers from China)

  ▪ to safeguard strategic industries (the US car industry is highly important to the economy)

  ▪ job protection (in the US tyre manufacturing industry)

  ▪ to raise government revenue (from taxing the imports from China).

  Up to 2 marks are awarded for each clearly explained reason, up to a total of 4 marks.

b Possible methods of trade protection include:

  ▪ **Tariffs** – these will raise the price of tyres from China, allowing US firms to compete *and* raise government tax revenues. However, this means US consumers pay higher prices and US firms are protected from being more efficient/cost effective.

  ▪ **Quotas** – these limit the number of tyres coming into the USA from China. Whilst this allows domestic firms to compete (perhaps), it does not necessarily give them a price advantage or make them more competitive against Chinese firms.

  ▪ **Subsidies for US producers** – this is highly costly for the US government, but will allow domestic firms to produce tyres at a lower cost, thus giving them a price advantage domestically and in overseas markets. Consumers may gain, but taxpayers will lose out.

  ▪ **Administrative barriers** – these make it more difficult for Chinese tyres to enter the USA due to excessive paperwork and compliance laws (such as safety checks on imported tyres). Whilst this provides protection in the short term, the US could end up being flooded with tyres from China in the long run.

  All forms of trade barriers can spark retaliation from China.

  1–3 marks are awarded for an answer that shows limited understanding.

  4–6 marks are awarded for an answer that shows some understanding although may be unbalanced or lacking in detail.

  Up to 6 marks are awarded if only one method is considered. Application may be missing at the lower end of the mark band.

  7–8 marks are awarded for a detailed answer that discusses at least two methods of trade protection, with justification of which one would be best for the USA to impose.

7

The diagram shows that £1 = \$1.587, so \$1 = $\dfrac{£1}{\$1.587}$ = £0.63

8 As £1 = \$1.55, then a \$35,500 car = $\dfrac{1}{1.55}$ × \$35,500 = £22,903

9 a \$45 × 0.65 = £29.25

  b \$45 × 0.60 = £27.00

10 a 1:6.5 = 65:422.5

  Therefore the price of the textbook = CNY422.5

  b 0.65:0.75 = 1:1.15

  Hence, the exchange rate is £1 = €1.15

  Answers that show that €1 = £0.87 are acceptable.

11 a An appreciation means that the value of the currency has increased. An example is the US dollar (USD) rising in value against the Sri Lankan rupee (LKR) from \$1 = LKR115 to \$1 = LKR125.

  b The likely effects of a currency appreciation in the above example include the following:

  ▪ The USA selling fewer exports to Sri Lanka as more rupees are needed to pay for American exports.

  ▪ Americans are more likely to buy products from Sri Lanka as their currency is worth more, i.e. imports become cheaper.

  ▪ All other things being equal, this will cause a balance of payments deficit for the USA.

  ▪ However, this depends on the extent to which the USA trades with Sri Lanka (and other nations). It also depends on the price elasticity of demand for both exports and imports.

  Up to 4 marks are awarded if a one-sided answer is considered.

  5–6 marks are awarded if there is a thorough examination of the likely impact on both exports and imports.

  7–8 marks are awarded for a thorough discussion that considers the likely impact on both exports and imports. There might also be consideration of other relevant approaches, for example, time lags involved in currency fluctuations or the scale of the currency appreciation or consideration of non-price determinants of demand for exports/imports (such as product quality).

12 a $150 - 5P = -25 + 9P$

  $\qquad 175 = 14P$

  $\qquad P = 12.5$ (HK\$)

  b $Q_d = 150 - 5P$

  $Q_d = 150 - (5 \times 12.5)$

  $Q_d = 150 - 62.5$

  $Q_d = 87.5$bn (£)

  or
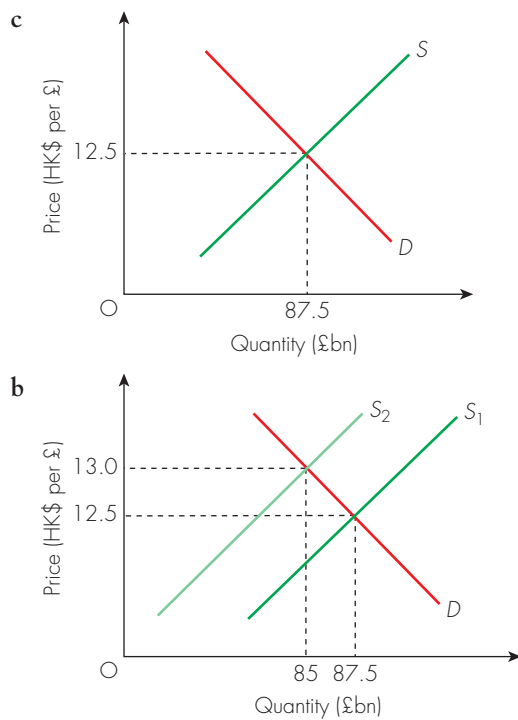
  $Q_s = -25 + 9P$

  $Q_s = -25 + (9 \times 12.5)$

  $Q_s = -25 + 112.5$

  $Q_s = £87.5$bn

c

b

13 a An exchange rate is the price of one currency (such as the US dollar) expressed in terms of another (such as the Chinese yuan) in order to facilitate international trade.

b Cheaper export prices from China (due to the 'artificially low' value of the yuan) leads to rising export sales and a larger trade surplus for China.

Exporters gain from a price advantage over its American and other foreign rivals. This can therefore help to create income and wealth in the Chinese economy.

Up to 2 marks are awarded for each advantage that is clearly explained.

14

Balance of trade in goods ($m)	2014
Food, beverages and tobacco	−3558
Oil	4305
Finished manufactured goods	−685
Others	−1886
	−1824
Balance of trade in services ($m)	**2014**
Transportation	−632
Communications	−531
Insurance	1450
Others	3776
	4063
Balance of trade	**2239**

The balance of trade in goods is in deficit of $1.824bn, whereas the balance of trade in services is in surplus of $4.063bn. This means the overall balance of trade is −1824m + 4063m = $2.239bn.

15

2014	Balance of trade in goods	Balance of trade in services	Investment income	Current transfers	Current account balance
Credit (+)	$736m	$336m	$295m	$106m	
Debit (−)	$663m	$277m	$261m	$119m	
Net balance	+$73m	−$59m	+$34m	−$13m	$35m

The current account balance = the sum of the net balance of the four components of the current account = +$35m.

16 a The balance of trade in services is the component of the current account that records the export earnings and import expenditure on services such as banking, insurance, transportation and tourism.

b

Balance of trade for Country K ($billion), 2014	
Exports	85
Goods	57
Services	28
Imports	88 + 15 = 103
Goods	88
Services	15
Balance of trade in goods	57 − 88 = (31)
Balance of trade in services	28 − 15 = 13
Trade balance	(31) + 13 = (18)

17 a Net income refers to the overall investment income (rent, wages, profit and interest) earned from assets owned and located overseas.

b Balance of trade = −$18.3bn + $21.8bn = +$3.5bn

c Current account = balance of trade + net income + net transfers, i.e. +$3.5bn + $6.7bn − $5.6bn = $4.6bn

18 a The balance of trade is the sum of the balance of trade in goods and balance of trade in services of an economy, i.e. the difference between the value of a country's total export earnings and its total import expenditure. It is the largest component of a country's balance of payments.

b For much of the period shown, Sri Lanka has experienced a falling trade balance and a deficit in its trade balance throughout 2004–13. Possible causes of this persistent deficit in its balance of trade include:

- deteriorating international competitiveness, leading to a fall in exports from Sri Lanka
- appreciation of the currency (rupee) which reduces the demand for exports
- higher prices of imported raw materials and essential products such as crude oil
- decline in tourism revenues
- poor terms of trade as Sri Lanka relies on the export of crops to pay for its imports, e.g. falling prices of tea and coconut (major export products of Sri Lanka). *Note*: the terms of trade do not need to be mentioned explicitly.

19 a A current account deficit occurs when more money leaves a country than enters it from transactions with foreign households and firms, usually because the economy's import expenditure is greater than its export earnings.

b During periods of economic growth, the economy experiences an increase in any combination of consumption expenditure, investment expenditure and government expenditure. This increased aggregate demand in the economy can help to offset the net outflow of money caused by the current account deficit.

During a recession, however, aggregate demand is falling so there is less expenditure from households (consumption), firms (investment) and the government. Combined with a current account deficit, it makes this a highly undesirable situation for the economy.

1–2 marks are awarded for an answer that shows limited understanding.

3–4 marks are awarded for a detailed explanation of the statement.

20 a A current account surplus is a situation when a country's balance of net export earnings, net income and net current transfers is positive. This is mainly due to a higher demand for exports and/or lower demand for imports.

  b Consequences of Kuwait's persistent current account surplus during the twenty-first century include the following:

   ▪ More employment opportunities due to the higher demand for exports from Kuwait.
   ▪ Improved standards of living as the country receives more foreign currency than it spends on imports (although the lack of access to imports can hinder the standards of living in Kuwait).
   ▪ Inflationary pressures as more money enters the economy.
   ▪ Higher value of the exchange rate (Kuwaiti dinar) due to the continually high demand for Kuwaiti exports. However, given it is one of the world's largest net exporters of oil – the demand for which is highly price inelastic – this might be very positive for the economy.
   ▪ Greater direct investments from abroad bring funds to Kuwait, thus aiding its economic growth and development.

  Note: the graph does not show the current account surplus, merely the % of GDP accounted for by Kuwait's current account. Notice the decline in 2001 (September 11 attacks) and 2003 (outbreak of the infectious SARS virus) affecting the global demand for oil.

21 A **customs union**, such as the European Union, is group of member countries that engage in free trade and impose a common external tariff on non-member countries. This means all members of the customs union impose the same trade restrictions on non-member states. By contrast, a **monetary union** exists when member states of a common market adopt a single currency and hence a common central bank that oversees monetary policy. An example would be the 17 Eurozone countries where there is convergence of monetary policy exercised through the European Central Bank (ECB).

22 Appropriate diagrams might include a PPF diagram (with an outwards shift of the PPF) or an AD–AS diagram (showing an increase in AD and/or AS). The answer could include an explanation of the benefits of any of the following:

  ▪ bilateral or multilateral trade agreements
  ▪ preferential trade agreements
  ▪ free trade areas, customs unions and common markets
  ▪ monetary union

23 a Price index of exports $= 110 \times 1.1 = 121$

  Price index of imports $= 105 \times 1.05 = 110.25$

  Hence, the new TOT $= \dfrac{121}{110.25} \times 100 = 109.8$

  b Previous TOT $= \dfrac{110}{105} \times 100 = 104.8$

  Hence, the TOT has increased by 4.77% from 104.8 to 109.8

24 a The price index of rice exports in 2013 $= \dfrac{481.6}{430} \times 100 = 112.0$

  b The price index of milk imports in 2013 $= \dfrac{22.6}{19.2} \times 100 = 117.7$

  c The terms of trade in 2013 $= \dfrac{112.0}{117.7} \times 100 = 95.2$

d The information below shows that between 2012 and 2014, the terms of trade in the country have worsened from 100.0 to 95.3 as the average price of exports has increased at a slower pace (of 17.6%) than the increase in the average price of imports (by 23.4%).

Year	Price of rice exports ($ per unit)	Price index (rice)	Price of milk imports ($ per unit)	Price index (milk)	Terms of trade
2012	430.0	100.0	19.2	100.0	100.0
2013	481.6	112.0	22.6	117.7	95.2
2014	505.7	117.6	23.7	123.4	95.3

Section 4 Development economics

1 Pre-growth income gap = $35,000 − $2000 = $33,000

Post-growth income gap = ($35,000 × 1.025) − ($2000 × 1.025) = $35,875 − $2050 = $33,825

Hence, the change in the income gap = $33,825 − $33,000 = the income has increased by $825

2 Pre-population growth GNI per capita = $\dfrac{\$50\text{bn}}{68\text{m}}$ = $735.3

Post-population growth GNI per capita = $\dfrac{\$54\text{bn}}{71\text{m}}$ = $760.6

Hence, the change in real GNI per capita = an increase of approximately $25.3

3 a Nominal GDP measures national output using *current market prices*, i.e. the value of GDP at the time of measurement without consideration of fluctuations in the price level (inflation rate) over time.

  b Possible responses could include an explanation of any multidimensional nature of economic growth. For example:

   ▪ Gross domestic product (GDP) as a key measure of national income and hence an indicator of standards of living and economic development, e.g. the USA is the most economically developed with a GDP of $15.685 trillion, whereas Burundi only has a GDP of $2bn.

   ▪ GDP per capita is another dimension of economic growth, e.g. whilst China has the second largest GDP of $8.23 trillion, its national income per capita (i.e. GDP/population size) is only $6,078, whereas Japan's national income per capita is much larger ($46,562), despite its lower nominal gross domestic product ($5.96tn). Hence, the Japanese economy is more economically developed than the Chinese economy.

   ▪ Unemployment also affects the multidimensional nature of development such as poverty, standards of living and income inequalities. Extremely high rates of unemployment in Kenya and Burundi will therefore negatively impact on economic development in these countries.

   ▪ Similarly, high and uncontrolled inflation rates tend to reduce the international competitiveness of countries. Hence, the relatively higher rates of inflation in Burundi, Kenya and Zambia means a loss in price competitiveness, especially as these countries tend to export income inelastic agricultural products such as tea, coffee, fruits, vegetables and minerals.

   ▪ Many economically underdeveloped countries have huge debts, thus causing a leakage from the economy and dampening economic development, *ceteris paribus*. The data in the table are not conclusive due to the financial crises faced by the USA and Japan; although a high ratio can simply be an indicator of debt affordability.

   Note: only two economic indicators need to be explained, in the context of the multidimensional nature of economic development.

4 As the exchange rate is 1 dems = 3.5 dans, then 3.5 dems = 12.25 dans.

5 a The Human Development Index (HDI) is a composite indicator of living standards and economic development in a country calculated by measuring three dimensions of human development: education, healthcare and income.

b

Country	HDI	Country	HDI
Australia	0.929	Vietnam	0.593
Russia	0.755	Ethiopia	0.363

Australia is most likely to have a HDI of 0.929 because the high HDI suggests it has the highest standards of living/human development (as measured by the composite index of healthcare, education and income levels).

Similarly, Ethiopia is likely to have the lowest HDI of 0.363 to show that it has the lowest standards of living/human development of the four listed countries.

Russia being relatively more economically developed than Vietnam is likely to have an HDI of 0.755 compared with Vietnam's 0.593.

1 mark is awarded for each correctly identified and explained answer, up to 4 marks.

*Note*: there is no need to explain the HDI for all four countries as the lines of reasoning will be similar.

6 The investment in education and healthcare are supply-side policies, so shift the long-run aggregate supply curve (LRAS) to the right. This results in an increase in real national income. Alternatively, this situation can be shown using a diagram showing an outwards shift of the production possibility curve (PPC) due to the increased productive capacity resulting from the investment in healthcare and education. For example, better nutrition and healthcare for women in LEDCs means they become far more productive.
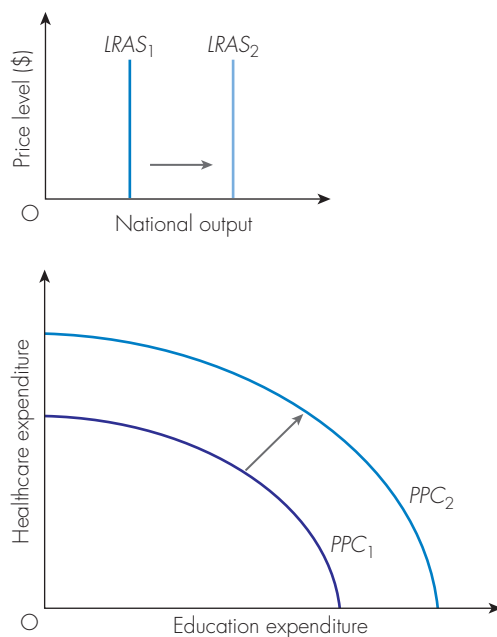
7 Answers could include an explanation of the following:

- Although the pattern of health expenditure is similar in Gambia and Luxembourg, the latter consistently spends a greater proportion of its GDP on healthcare, which is a vital domestic factor contributing to economic development.
- Access to healthcare has a direct impact on economic development: a healthy workforce is a more productive workforce.
- There is a huge opportunity cost of sickness/poor health, including lost output, income.
- Good maternal health correlates positively with children's attendance at school (refer to UNICEF's findings).

8   Answers could include the following:

- A definition of economic growth and development.
- Economic growth is generated by an increase in economic activity, shown by an outwards shift of the PPC from PPC_1 to PPC_2.
- The increase in the amount of both goods and services tends to lead to an improved standard of living, and thus economic development in the long term.
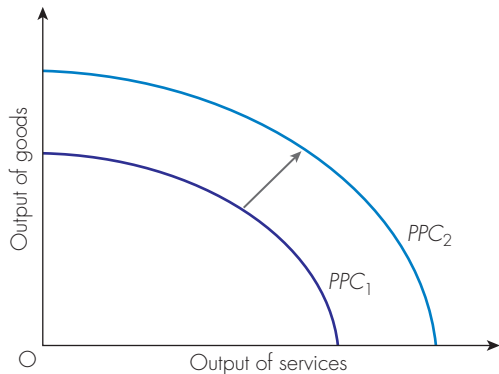
9   You might illustrate the problem using a diagram that shows low PED, PES or YED.

Primary products are of low value in the production process, i.e. raw materials fetch a lower price than finished (manufactured) products.

This means producers in LEDCs earn low incomes. Low incomes/revenues can therefore act as a barrier to economic development.

The use of appropriate technology increases the supply of primary products but this reduces the price for suppliers.

Prices are vulnerable to external forces (outside the control of producers), e.g. adverse weather for agricultural output. LEDCs that specialise in the output of primary products therefore face huge uncertainties.

Low and unstable income flows for households and producers mean that they may be sucked in or stuck in a poverty trap.

10 Answers could include the following:

- A definition of the terms of trade, i.e. the index of average export prices relative to the index of average import prices.
- LEDCs tend to face the problem of declining TOT – in this case, coffee prices will fall due to the significant increase in world output (supply) of coffee from countries such as Vietnam. This reduces their TOT, *ceteris paribus*.
- Technology has also resulted in a greater world supply of coffee, thus adding downward pressure on prices.
- The fall in the TOT results in less income for coffee exporters, especially as the LEDCs have low bargaining power when negotiating prices with large MNCs that buy the coffee.

11 Answers could include the following:

- A definition of the poverty trap (or poverty cycle) – the vicious cycle of poverty causing greater poverty. Low-income earners spend most, if not all, of their income on meeting their essential needs so they have insufficient funds to invest in their future and are trapped in poverty.
- The relief to the poverty trap that FDI can bring, e.g. job creation and investment in human capital thus boosting long-term productivity.
- Higher incomes (caused by job creation) can lead to more savings in the long run, thus increasing the funds available for investment in the LEDC.

Note: there is no need to draw the poverty cycle.

12 Answers could include the following:

- A definition of FDI, i.e. the long-term capital expenditure of multinational companies in overseas countries.
- An explanation that FDI is an injection to the circular flow, so boosts aggregate demand, *ceteris paribus*. Real national output thus increases from Y_1 to Y_2, causing economic growth.

- HL students might also refer to the positive multiplier effects caused by an increase in FDI, e.g. job creation and increased consumption expenditure.
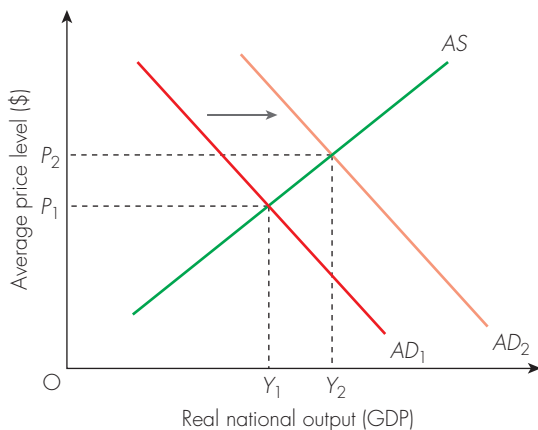
13 a **Gross national income (GNI)** is the total value of all final output of goods and services produced by a country's citizens, both domestically and abroad, after deducting indirect business taxes. Since taxes vary between countries, excluding indirect business taxes would make international comparisons of national output more meaningful. **Official development assistance (ODA)** is foreign aid from donor governments, rather than assistance from NGOs.

   b Answers could include the following:
   - Discussion of the role of aid in economic development, e.g. can LEDCs and HIPCs develop without aid? Without foreign aid, many of the world's poorest countries would struggle to ever get out of the poverty cycle.
   - ODA and concessionary long-term loans can be used to increase the productive capacity of the LEDC, thus helping it to achieve economic growth and development.
   - Foreign aid can help to reduce or eradicate extreme poverty (one of the UN's Millennium Development Goals), thus improving standards of living and economic development.
   - As a form of injection into the circular flow of income, the right kind of foreign aid, used for the right purposes, can help to reduce income inequalities and unemployment in LEDCs.
   - However, not all aid will necessarily help LEDCs to develop, e.g. tied aid, which can harm the competitiveness of LEDCs, or humanitarian aid such as emergency relief to help countries recover from natural disasters or wars.
   - Foreign aid in the form of loans can create barriers to economic development, as interest repayments add to the financial burden of many LEDCs, especially as debts have to be repaid in foreign currencies.
   - Foreign aid can cause LEDCs to rely on donors from MEDCs. This lack of incentives does not help such countries to develop in the long run.
   - As Figures 4.7 and 4.8 show, ODA and foreign aid are barely at the target level so are ineffective in promoting economic development.
   - In evaluating the discussion, you might choose to address or acknowledge the types of foreign aid being given and the underlying motives behind giving foreign aid.

14 Excessive foreign debt creates problems for the economic development of the listed countries because there is an opportunity cost of debt finance. For example, Guyana has to spend 63.3% of its GDP to finance (repay) its debts. As debts incur compound interest, excessive borrowing mounts beyond the country's ability to repay its loans. Zimbabwe, for example, has a debt-to-GDP ratio of 150.9%, meaning its debts exceed its national income. Hence, Zimbabwe and Lebanon are likely to face major barriers to their economic development, possibly with the label of being a highly indebted poor country (HIPC).