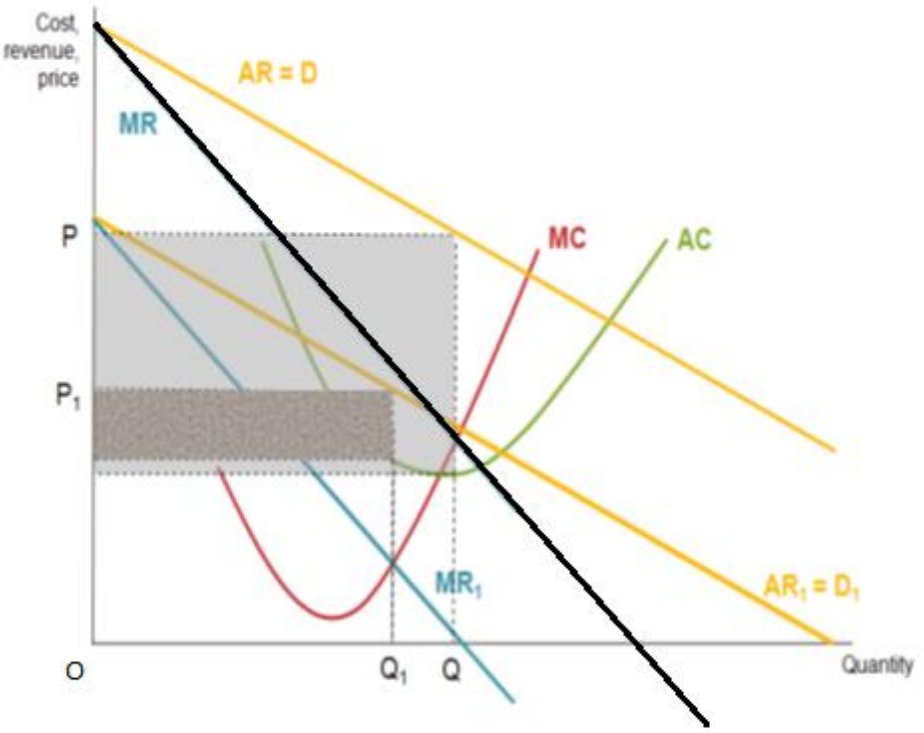
Unit 3 – Mark scheme

Question	Quantitative skills assessed	Answer	Mark
1	**QS8**: Make and interpret calculations of elasticity.	B	**(1)**
2	**QS9**: Interpret, apply and analyse information in written, graphical and tabular forms.	D	**(1)**
3	–	B	**(1)**
4	**QS9**: Interpret, apply and analyse information in written, graphical and tabular forms.	A	**(1)**
5	**QS9**: Interpret, apply and analyse information in written, graphical and tabular forms.	C	**(1)**
6	**QS6**: Calculate cost, revenue and profit (marginal, average, totals). **QS9**: Interpret, apply and analyse information in written, graphical and tabular forms.	C	**(1)**

Question	Answer	Mark
7(a)	**Application 2** Quantitative skills assessed: **QS2**: Calculate, use and understand percentages, percentage changes and percentage point changes. Up to 2 marks for calculation: 4 firm concentration ratio: 40% + 21% + 13% + 7% **(1)** = 81% **(1)** **NB Full marks for correct answer (81%), regardless of working.**	**(2)**

Question	Answer	Mark
7(b)	**Knowledge 2 Application 2** Quantitative skills assessed: **QS9**: Interpret, apply and analyse information in written, graphical and tabular forms. **Knowledge** Up to 2 marks for knowledge of characteristics of oligopoly, e.g.: • Non-price competition **(1)**. • Diversification into other markets **(1)**. • Firms may compete by using branding / advertising **(1)**. • High concentration ratio / interdependence / collusion **(1)**. **Application** Up to 2 marks for applying the characteristics to the inkjet printer market, e.g.: • For non-price competition, e.g. measures to prevent low-price non-HP cartridges being used in HP's printers **(1)**. • For diversification into other markets, e.g. HP attempt to enter market for smartphones **(1)**. • For branding / advertising, e.g. HP spends over $400 million on advertising in the USA **(1)**. • Figure 1 indicates an oligopolistic market (high concentration ratio) so there will be interdependence / collusion, e.g. they all sell printers at a low price **(1)**.	**(4)**

Question	Answer	Mark
7(c)	**Knowledge 2 Application 2 Analysis 2** Quantitative skills assessed: **QS8**: Make and interpret calculations of elasticity **Knowledge** 1 mark for either a definition or formula of cross-elasticity of demand: • Definition of cross-elasticity of demand: responsiveness of quantity demanded for product X to a change in price of product Y **(1)**. • Formula of cross-elasticity of demand: $\frac{\%\text{ change in quantity demanded of product X}}{\%\text{ change in price of Product Y}}$ **(1)** PLUS 1 mark for definition or implied knowledge of substitutes: one product may be bought in place of another **(1)**. **Application** Up to 2 marks for application to printer cartridges, e.g.: • HP cartridges and low-price cartridges can be used interchangeably / are substitutes. **(1)** • Reference to Extract 1: consumers are using low-price cartridges instead of HP cartridges **(1)**. **Analysis** Up to 2 marks for linked explanation, e.g.: • A rise in the price of HP cartridges would cause an increase in demand / rightward shift in demand curve for low-price cartridges. **(1)** • Consequently, XED would be positive **(1)**.	**(6)**

Question	Answer	Mark
7(d)	**Knowledge 2 Application 2 Analysis 2 Evaluation 2** Quantitative skills assessed: **QS4**: Construct and interpret a range of standard graphical forms. **QS9:** Interpret, apply and analyse information in written, graphical and tabular forms.  **Knowledge** Up to 2 marks for drawing a diagram that shows knowledge of: • Original AR, MR, AC, MC and profit-maximising equilibrium **(1)**. • Fall in demand would cause leftward shift in AR curve and corresponding leftward shift in MR curve **(1)**. **Analysis** Up to 2 marks for linked explanation of impact on HP's profits, e.g.: • Profit-maximising output would fall from Q to Q1 / price will fall from P to P1 **(1)**. • Revenue would fall from 0P x 0Q to 0P1 x 0Q1. **(1)** • Final profit-maximising equilibrium showing lower price, output **(1)** and supernormal profit **(1)**. **Application** Up to 2 marks for application to context of PC market, e.g.: • Demand for PCs has dropped because of increased use of smartphones and tablets to access the internet **(1)**. • PCs are not portable so are a poor substitute for mobile devices **(1)**. • Diagram related to context **(1)**.	

Question	Answer	Mark
7(d) ***Cont.***	**Evaluation** Up to 2 marks for evaluative comments, e.g.: • Magnitude: depends on size of the fall in demand (6% fall in PC sales in 2015) **(1)**, a small change will have little impact because it will result in only a small shift in AR and MR curves **(1)**. • Fall in profits on PCs may be offset by higher profits on HP's other products, e.g. ink cartridges **(1)** because there is less competition from low-price cartridges **(1)**. • Fall in profits may be offset by cost reductions / increases in productivity **(1)**, which would cause a downward shift in AC and MC curves **(1)**.	**(8)**

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Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited.

Quantitative skills assessed
QS4: Construct and interpret a range of standard graphical forms.
QS9: Interpret, apply and analyse information in written, graphical and tabular forms.

Knowledge, Application, Analysis (8 marks) – indicative content
• Change from profit-maximising output (MC = MR) to revenue maximising output (MR = 0). May be illustrated diagrammatically.
• Change from profit-maximising output (MC = MR) to sales maximising output (AC = AR). May be illustrated diagrammatically.
• Predatory pricing: selling its products at below average cost with aim of driving out competitors, increasing market share and so increasing revenue in the long-run. May be illustrated diagrammatically.
• Limit pricing: setting price at a level which will deter potential new entrants so enabling the firm to increase total revenue in the long-run. May be illustrated diagrammatically.
• Collusive price-fixing agreements with other manufacturers so that HP can behave like a monopolist. May be illustrated with game theory analysis.
• Price discrimination, e.g. for cartridges if HP is successful in maintaining its monopoly.
Restrict to a maximum of 6 marks for Knowledge, Application and Analysis if no diagram provided.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models.
Use of generic material or irrelevant information or inappropriate examples.
Descriptive approach which has no chains of reasoning.</td></tr>
<tr><td>Level 2</td><td>4–6</td><td>Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models.
Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer.
Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.</td></tr>
<tr><td>Level 3</td><td>7–8</td><td>Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models.
Ability to link knowledge and understanding in context using relevant examples which are fully integrated to address the broad elements of the question.
Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.</td></tr>
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	Evaluation (6 marks) – indicative content • In the short-run, revenues may fall, e.g. in the case of sales maximisation, predatory pricing and limit pricing. • Decision on pricing strategy may be influenced by the type of product, e.g. much higher competition in the PC market than in the printer cartridge market (after 13 September 2016). • Non-price factors may be more significant in determining sales, so pricing strategies may not result in an increase in revenue. • Overall impact depends on how other firms react. • Price fixing agreements are illegal in most countries; firms involved could be fined and directors imprisoned.	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	1–2	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	3–4	Evidence of evaluation of alternative approaches Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	5–6	Evaluation recognises different viewpoints and/or is critical of the evidence. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

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Quantitative skills assessed
QS4: Construct and interpret a range of standard graphical forms.

Knowledge, Application, Analysis (12 marks) – indicative content
• Recognition of horizontal integration.
• Economies of scale: falling long-run average costs as output increases. Examples include:
o technical – increased use of machinery
o managerial – employment of specialist mangers
o marketing – cost savings in terms of advertising
o financial – ability to borrow money at lower rates of interest
o risk-bearing – spread of risks, e.g. increase in sales in different countries.
All of the above would cause a fall in costs and an increase in profits.
• Increase in market share: possibility of higher revenues and profits
• Impact on shareholders:
o those holding Reynolds American shares will benefit from being offered a price above current market price
o BAT shareholders may benefit from higher share price if takeover happens.
• Impact on workforce:
o mergers usually result in rationalisation and some job losses / unemployment.
• Impact on customers:
o lower costs could result in lower prices and increased consumer surplus.
Restrict to a maximum of 9 marks for Knowledge, Application and Analysis if no diagram provided.</td></tr>
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<tr><td>Level 1</td><td>1–3</td><td>Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models.
Use of generic material or irrelevant information or inappropriate examples.
Descriptive approach which has no chains of reasoning.</td></tr>
<tr><td>Level 2</td><td>4–6</td><td>Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models.
Limited application of knowledge and understanding to economic problems in context.
A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.</td></tr>
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Level	Mark	Descriptor
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
	Evaluation (8 marks) – indicative content • Diseconomies of scale: danger that the new larger company could result in an increase in long-run average costs as a result of, for example, increased costs of administration and co-ordination. • The size of the takeover ($47 billion) is large and would be likely to have a significant impact on market share. • Demand for cigarettes is price inelastic so would increase market power of BAT considerably. • Although market share might increase, the overall market for cigarettes may be declining, especially in developed countries. Also, the development of substitutes, for example e-cigarettes, might reduce demand for cigarettes. • BAT may have increased debt so BAT shareholders might not benefit in the long run. • Governments might continue to increase the tax on cigarettes so consumers might not benefit from lower prices. • Also, BAT might have gained a significant degree of monopoly power so could increase its prices.	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

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Quantitative skills assessed:
QS4: Construct and interpret a range of standard graphical forms.

Knowledge, Application, Analysis (12 marks) – indicative content
• Increase in supply of labour, leading to rightward shift in supply curve, leading to fall in wage rate in specific industries. May be illustrated by supply and demand diagram.
• Firms have greater choice of workers.
• Increase in skills of workforce, leading to higher productivity, leading to lower average costs of production and to higher profits.
• Rightward shift in productive possibility frontier / increase in productive capacity. May be illustrated by a PPF diagram.
• Impact on particular markets, e.g. increase in demand for houses, education services and health care.
• Externalities resulting from immigration, e.g. external benefits to firms from higher demand for their goods and services; external costs from the need to build more houses on farmland.
• Could lead to increase in real output and fall in price level. May be illustrated by an AD / AS diagram.
• Impact on public finances: if most immigrants secure jobs then tax revenues will increase.

Restrict to a maximum of 9 marks for Knowledge, Application and Analysis if no diagram provided.</td></tr>
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Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
	Evaluation (8 marks) – indicative content • Impact depends on education, skills and experience of immigrant workers. • Impact depends on level of unemployment. • Impact depends on net migration. • Not all immigrants may be able and willing to work. • Impact on wage rates in particular industries might not fall if demand for the product is rising or if there is a skills shortage. • Impact depends on elasticity of demand for labour. • Impact on public finances depends on ratio of immigrants who are working to dependents; and number working in the informal economy.	
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Quantitative skills assessed:
QS4: Construct and interpret a range of standard graphical forms.

Knowledge, Application, Analysis (12 marks) – indicative content
• Understanding of natural monopoly – there are falling long-run average costs, so it is inefficient if more than one firm in the market. May include falling LRAC diagram / natural monopoly diagram. Natural monopoly and productive efficiency – production will be at lower point on LRAC curve than if there were more firms in the market:
o this could lead to a reduction in prices for consumers and higher consumers' surplus.
• Natural monopoly and allocative efficiency: natural monopolies could result in price more closely reflecting marginal cost and ensure that the goods produced reflect consumer demand. Amtrak could offer new services with the knowledge that it will have no competition.
• Natural monopoly and dynamic efficiency: Amtrak might use super-normal profits for investment in new technology, helping to reduce LRAC over time.
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	Evaluation (8 marks) – indicative content • Consumers might suffer from less choice and higher prices, so moving away from the allocatively-efficient level of output. • With falling long-run average costs, allocative efficient pricing (P=MC) would result in a loss so is unlikely to be adopted by Amtrak. • A natural monopoly might result in X-inefficiency, resulting in higher costs and higher prices. • Workers could suffer if the firm decides to reduce employment as a means of cutting costs. • Profits may be used for dividends rather than for investment and innovation in the products or services of the business.	
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