



Economics Questions By Topic:

PPF & Opportunity Cost (1.1.3 & 1.1.4) Mark Scheme

A-Level Edexcel Theme 1

 0207 060 4494

 www.expert-tuition.co.uk

 online.expert-tuition.co.uk

 enquiries@expert-tuition.co.uk

 The Foundry, 77 Fulham Palace Road, W6 8JA

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Section A

Question Number	Answer	Mark
1	<p style="text-align: center;">Knowledge 1, Application 1, Analysis 1</p> <p>Knowledge/Understanding 1 mark for identification of opportunity cost e.g. the next best alternative forgone.</p> <p>Application 1 mark for specific reference to government spending e.g. schools and hospitals.</p> <p>Analysis 1 mark for analysis of problem e.g. the economic and social case for a subsidy should be judged carefully on the grounds of efficiency and fairness.</p> <p>Government subsidies inevitably carry an opportunity cost and in the long run there might be better ways of saving energy.</p>	(3)

Question Number	Answer	Mark
2	<p style="text-align: center;">Analysis 1</p> <p>The only correct answer is A</p> <p>B is not correct because the potential output is not likely to increase C is not correct because A is more likely than C which illustrates a reallocation of resources towards consumer goods. If anything a reallocation of resources towards more capital goods is more likely D is not correct because this illustrates an increase in actual output which the stem to the question does not provide evidence for</p>	(1)

Question Number	Answer	Mark
3(a)	Application 2	
	<p>Application: Calculation of original opportunity cost of producing 50 capital goods is $120 - 100 = \mathbf{20}$ consumer goods. (1 mark)</p> <p>Calculation of new opportunity cost of 50 capital goods is $170 - 140 = \mathbf{30}$ consumer goods. (1 mark)</p>	(2)

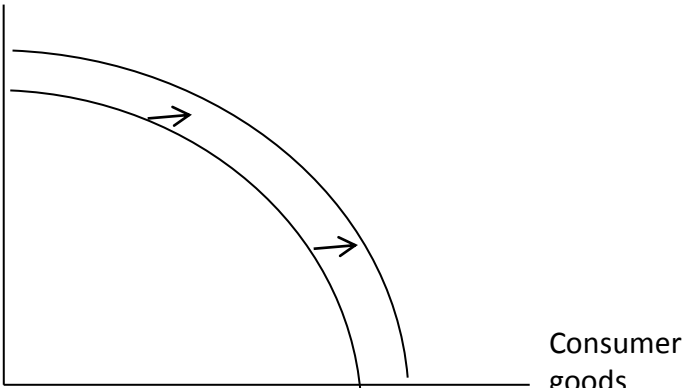
Question Number	Answer	Mark
3(b)	<p>The only correct answer is D</p> <p><i>A is not correct because this would be describing a change in actual output such as W to V from inside the PPF XY</i></p> <p><i>B is not correct because PPF shows potential output and not the cost of output</i></p> <p><i>C is not correct because PPF shows potential output and not the demand for a good or service</i></p>	(1)

Question Number	Answer	Mark
3(c)	Knowledge 1, Analysis 1	
	<p>Knowledge/understanding: 1 mark for e.g. Position W represents an</p> <ul style="list-style-type: none"> • inefficient allocation of resources (1) • unemployment of resources (1) <p>Analysis: 1 mark for e.g.</p> <ul style="list-style-type: none"> • It is possible to increase output of both consumer goods and capital goods by using unemployed resources (1) • The economy could produce at either 100 or 140 consumer goods but is currently producing 80 (1) • The country is operating inside the PPF (1) 	(2)

Question Number	Answer	Mark																								
4(a)	<p style="text-align: center;">Knowledge 1, Application 1, Analysis 1</p> <p>Knowledge/understanding 1 mark for definition of opportunity cost (e.g. value of the next best alternative foregone) 1 mark for definition of production possibility frontier (e.g. the maximum potential output combinations of two goods an economy can achieve when all its resources are fully and efficiently employed)</p> <p>Application 1 mark for application – Application to the table information to demonstrate that opportunity cost increases or is small for manufacturing goods as more is produced (at least two calculations need to be shown for opportunity cost increasing and this may be in the table or in the written explanation or one data reference to opportunity cost being small)</p> <table border="1" data-bbox="411 987 1209 1462"> <thead> <tr> <th>Capital goods output (million units)</th> <th>Consumer goods output (million units)</th> <th>Opportunity cost</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>42</td> <td>-</td> </tr> <tr> <td>10</td> <td>40</td> <td>2</td> </tr> <tr> <td>20</td> <td>36</td> <td>4</td> </tr> <tr> <td>30</td> <td>30</td> <td>6</td> </tr> <tr> <td>40</td> <td>22</td> <td>8</td> </tr> <tr> <td>50</td> <td>12</td> <td>10</td> </tr> <tr> <td>60</td> <td>0</td> <td>12</td> </tr> </tbody> </table> <p>Analysis 1 mark for linked development e.g. the opportunity cost for the economy of moving from consumer goods to capital goods is small compared to the gains in production made (1 Analysis) or diagram of production possibility frontier, illustrating concept of increasing opportunity cost – it must be correctly labelled with consumer goods and capital goods (concave to origin) (1)</p>	Capital goods output (million units)	Consumer goods output (million units)	Opportunity cost	0	42	-	10	40	2	20	36	4	30	30	6	40	22	8	50	12	10	60	0	12	(3)
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Question Number	Answer	Mark
4(b)	B	(1)

Question Number	Answer	Mark
5	<p>D (1 mark)</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (the maximum output an economy can achieve when all its resources are fully / efficiently employed) / an outward shift of the production possibility frontier represents economic growth. (1 mark) • Diagram depicting an outward shift in the production possibility frontier with correctly labelled axes. (1 mark) • An increase in immigration means more labour resources available for use in production / linked development e.g. an example. (1+1 marks) <p>Rejection marks</p> <ul style="list-style-type: none"> ➤ Option A incorrect since a decrease in unemployment would just move the actual output closer to the production possibility frontier and not shift it. (1 mark) ➤ Option B incorrect since an increase in demand for goods does not guarantee an increase in investment / outward shift in the production possibility frontier. (1 mark) ➤ Option C incorrect since an increase in unemployment benefits may reduce the incentive to work and could even decrease the production possibility frontier in the long run. (1 mark) 	(4)

Question Number	Answer	Mark
6	<ul style="list-style-type: none"> • D (1 mark) • Definition of production possibility frontier (maximum output potential for an economy when all its resources are fully / efficiently employed). (1 mark). • Explanation of the effects of economic growth on the production possibility frontier e.g. it will shift outwards (this may be annotated on diagram) OR award for definition of economic growth e.g. an increase in real output / an increase in the productive capacity of an economy. (1 mark) <p data-bbox="504 663 596 734">Capital goods</p>  <ul style="list-style-type: none"> • Application to question: more capital goods are being produced at W / capital goods help to produce more goods in the future. (1 mark) <p data-bbox="541 1361 810 1395">Rejection marks</p> <ul style="list-style-type: none"> • Option A incorrect since the opportunity cost of 50 consumer goods is 10 capital goods. (1 mark) • Option B incorrect since there is full employment of resources at V since it is on the production possibility frontier. (1 mark) • Option C incorrect since the opportunity cost of 180 consumer goods is 130 capital goods. (1 mark) 	(4)

Question Number	Answer	Mark
7	<ul style="list-style-type: none"> • Answer C (1 mark) • Definition of opportunity cost (the value of the next best alternative foregone). (1 mark) • Definition of production possibility frontier (maximum output combinations an economy can achieve when all resources are fully / efficiently employed). (1 mark) • Explicit use of figures: constant opportunity cost of 1 capital good to 1.5 consumer goods (accept variations of this such as 20 capital goods forgoes 30 consumer goods OR 1 consumer good forgoes 0.66 capital goods) / Accept reference to the gradient / straight line being constant and so indicating a constant opportunity cost. (1 mark) • NB: this may be shown by annotation of the diagram NB: no marks available for definition of economic growth <p>Rejection marks</p> <ul style="list-style-type: none"> ➤ Option A is incorrect since the opportunity cost of 90 consumer goods is 60 capital goods. (1 mark) ➤ Option B incorrect as the rate of economic growth will increase since there are more capital goods. NB: Must refer to an increase in capital goods. (1 mark) ➤ Option D incorrect since moving to point Z means there are less consumer goods available for the current period and so living standards will fall. (1 mark) 	(4)

Question Number	Answer	Mark
8	<p>Correct option B (1 mark)</p> <ul style="list-style-type: none"> • Definition of opportunity cost (the value of the next best alternative foregone) (1 mark) • Definition of scarcity (resources are limited or finite in supply and so cannot meet all human wants) NB: need reference to wants or needs here to award (1 mark) • Definition of resources (for example, labour, land, capital and enterprise used in production of goods and services) (1 mark) <p>NB: award for a maximum of 2 definition marks.</p> <ul style="list-style-type: none"> • Example of scarce resources (for example, fossil fuels are finite in supply) (1 mark) • Application of opportunity cost (for example, a producer or consumer may have to choose between two different products / government may have to choose between a new hospital or a new school) (this may be shown by diagrammatic analysis: movement along the production possibility frontier / revealing the gain in one good and loss of the other good) (1+1 marks) <p>Rejection marks</p> <ul style="list-style-type: none"> • Option A incorrect since this is a definition of market failure – not an explanation of why resources are scarce. (1 mark) • Option C incorrect since resources are finite compared to human wants / or finite resources result in the basic economic problem. (1 mark) NB: do not double award with regards to the definition of scarcity. • Option D incorrect since supply exceeding demand is due to price being too high / the resources used in supply are scarce. (1 mark) 	(4)

Question Number	Answer	Mark
9	<p>Correct option D (1 mark)</p> <ul style="list-style-type: none"> • Definition of specialisation or division of labour (labour allocate all their time in producing just one good or service) (1 mark) • Definition of production possibility frontier (maximum possible output combinations of two goods or services an economy can achieve when all resources are fully efficiently employed or, the maximum output potential for Bob and Wendy) (1 mark) • Identification that Wendy should produce bathrooms and Bob bedrooms / reason is due to different opportunity cost or efficiency or productivity (1+1 marks) • Relevant numerical application: for example, Wendy can specialise in tiling bathroom floors and increase output to 4 per week and Bob can specialise in decorating bedrooms and increase output to 4 per week (this may be shown on diagram). (1 mark) <p>NB: this may include calculations of opportunity cost.</p> <p>Rejection marks</p> <ul style="list-style-type: none"> • Option A incorrect since opportunity cost is different - with a numerical example e.g. to decorate 1 bedroom Bob has an opportunity cost of 0.5 tiling of a bathroom whereas for Wendy the opportunity cost of decorating 1 bedroom is 2 tiling of a bathroom / opportunity cost differs since they have different gradients on their production possibilities. (1 mark) • Option B incorrect since Wendy can only decorate 2 bedrooms per week whereas Bob can decorate 4 bedrooms per week. (1 mark) • Option C incorrect since Bob has a higher opportunity cost of tiling 1 bathroom floor (forgo decorating 2 bedrooms compared to Wendy who forgoes decorating just 0.5 bedrooms). (1 mark) 	(4)

Question Number	Answer	Mark
10	<p style="text-align: center;">Answer B (1 mark)</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (maximum output for an economy when all its resources are fully and efficiently employed). (1 mark) • Definition or explanation of economic growth (an increase in real GDP / an increase in the productive potential for an economy / increase in productive capacity / an outward shift in the PPF curve). (1 mark) • Application to diagram B: (it is possible to produce more capital and more consumer goods when the curve shifts outwards). (1 mark) • Identification of any one cause of an outward shift in the production possibility frontier: (increase in immigration / quality of labour / capital stock / technology / discovery of new resources). (1 mark) <p style="text-align: center;">Rejection marks</p> <ul style="list-style-type: none"> ➤ Option A incorrect since this shows a decrease in productive potential / could due to a natural disaster or war / negative economic growth. (1 mark) ➤ Option C incorrect since this shows a movement along the production possibility frontier so demonstrating opportunity cost. (1 mark) ➤ Option D incorrect since this shows an increase in unemployment output of resources. (1 mark) 	(4)

Question Number	Answer	Mark
11	<ul style="list-style-type: none"> • A (1 mark) • Definition of production possibility frontier (maximum output potential for an economy when all its resources are fully / efficiently employed) (1 mark). • W to V shows actual output increasing so unemployed resources falling or unemployment falling / annotation of diagram to show rise in output (1 mark). • W to V shows the output gap falling / reduction in spare capacity / economy moving closer to the full employment level of output / annotation of diagram to show a decrease in output gap (1 mark). • W to V shows a more efficient use of resources (1 mark). • Accept numerical application (1 mark). <p>Rejection marks</p> <ul style="list-style-type: none"> • Option B incorrect since position Z is unobtainable. • Option C incorrect since economy already at full employment level. • Option D incorrect since an outward shift in the frontier shows an increase in output potential. 	(4)

Question Number	Answer	Mark
12	<p>C (1 mark)</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (PPF) (the maximum output combinations of two goods an economy can achieve when all its resources are fully / efficiently employed). (1 mark) • Position Z currently unobtainable since it is beyond the production possibility frontier / only positions on or within the frontier can be achieved / economic growth is required. (1 mark) Note: this may be annotated on to the diagram by an outward shift of the PPF. • Position Z can be achieved with more resources / new technology and this will take time. (1 mark). <p>Note: No marks are available for definition of opportunity cost as this is not relevant to the question.</p> <p>Rejection marks</p> <ul style="list-style-type: none"> • Option A incorrect since position W has unemployed resources / there is an inefficient allocation resources / it is not on the production possibility frontier / it is possible to increase output of both goods. (1 mark). • Option B incorrect since relatively fewer capital goods at position X compared to Y. capital goods are a major determinant of economic growth. (1 mark). • Option D incorrect since the production possibility frontier is curved - not constant or opportunity cost is increasing due to the curve. (1 mark). 	(4)

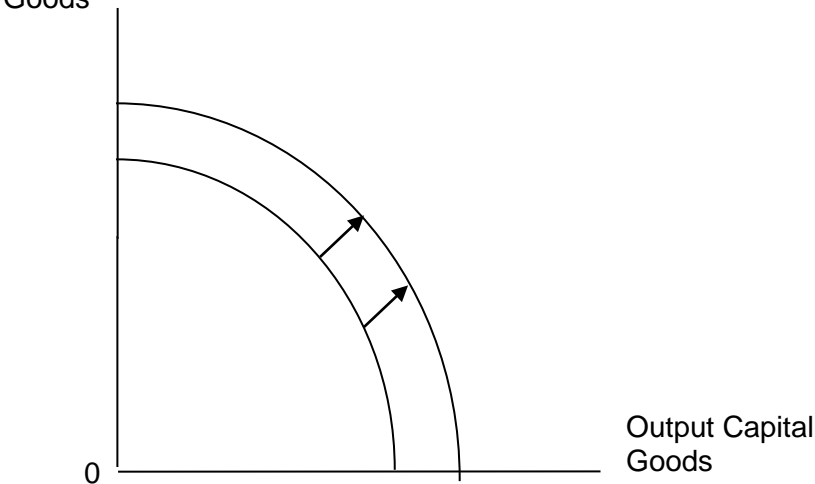
Question Number	Answer	Mark
13	<ul style="list-style-type: none"> • Answer B • Definition of production possibility frontier (the maximum output combinations of two goods an economy can achieve when all its resources are fully / efficiently employed) (1 mark). • Definition of opportunity cost (the value of the next best alternative foregone) (1 mark). • Application to data e.g. by producing no consumer goods output of capital goods rises by 30 to make a total of 90 (1 mark) / $90 - 60 = 30$ capital goods This may be annotated on the diagram (1 mark). NB Be prepared to award up to 2 marks for a well developed explanation. <p>Rejection marks include</p> <ul style="list-style-type: none"> ➤ Option 'A' is incorrect as this is the additional consumer goods that can be produced if there are no capital goods. (1 mark) ➤ Option 'C' is incorrect since 60 units of capital goods can be attained at the same time as 75 units of consumer goods. (1 mark) 	(4)

Question Number	Answer	Mark
14	<p>Answer C (1)</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (the maximum output combinations an economy can achieve when all its resources are fully / efficiently employed) (1) • Definition of opportunity cost (the value of the next best alternative foregone) (1) • Diagrammatic analysis or explanation of opportunity cost, e.g. depicting a movement along the production possibility frontier and showing the loss of output for one good and gain of another good (1+1) <p>Rejection marks</p> <ul style="list-style-type: none"> • Option A is incorrect since external costs are those costs not taken into account by the price mechanism and are not shown on a production possibility frontier. (1) • Option B or D incorrect since producer surplus / equilibrium price is shown by use of a demand and supply diagram. (1) 	(4)

Question Number	Answer	Mark
15	<p data-bbox="427 241 683 275">Answer C (1 mark)</p> <ul data-bbox="448 315 1193 920" style="list-style-type: none"> <li data-bbox="448 315 1193 450">• Definition of production possibility frontier (e.g. the maximum output combinations of two goods an economy can achieve when all its resources are fully and efficiently employed) (1mark). <li data-bbox="448 488 1193 555">• Definition of opportunity cost (e.g. value of the next best alternative foregone) (1 mark). <li data-bbox="448 593 1193 757">• Application to the table information to demonstrate that opportunity cost increases for agricultural goods as more is produced (at least two calculations need to be shown and this may be in the table or in the written explanation) (2 marks). <li data-bbox="448 795 1193 920">• Diagram of production possibility frontier, illustrating concept of increasing opportunity cost - it must be correctly labelled with agricultural and manufactured goods (concave to origin) (1 mark). 	(4)

Question Number	Answer	Mark
16	<p>Answer D</p> <ul style="list-style-type: none"> • Definition of a production possibility frontier (the maximum output combinations of two goods / services an economy can achieve when all its resources are fully / efficiently employed) (1 mark). • An outward shift in agricultural goods indicates an increase in potential output (accept output) (1 mark). • An increase in agricultural output can result from technological changes with no opportunity cost in tourist services (1 mark). <p>Application to technological improvements in agriculture e.g. new machinery, GM crops, fertilisers. (1+ 1 mark).</p>	(4)

Section B

Question Number	Answer	Mark
17	<p>6 KAA marks</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (e.g. maximum output an economy can achieve when all its resources are fully or efficiently employed). (1 mark) • Diagram of a Production possibility frontier depicting an outward shift in the curve / suitable labelling of axes e.g. capital goods versus consumer goods or private goods versus public goods or tidal barrage versus alternatives. (1+1 marks) <p>• NB: award a maximum of 4 KAA marks if no appropriate diagram offered</p> <ul style="list-style-type: none"> • The tidal barrage represents an increase in the capital stock or capital goods or investment / this is likely to increase potential output or economic growth. (1+1 marks) • Award for 30 000 jobs created only if linked to infrastructure and new factories. • Tidal barrage will provide an energy source to enable future production of goods and services for many years. (1 mark) • Tidal barrage may lead to further investment programmes e.g. road and rail links in the region / factory to build turbines and a new dock / multiplier effects. (1+1 marks) • The project may attract more domestic or foreign direct investment e.g. funding is likely to be from overseas / this could increase production possibilities further. (1+1 marks) • Less flooding risks so production not disrupted as in recent years. (1 mark) <p>Output Consumer Goods</p>  <p style="text-align: right;">Output Capital Goods</p>	(10)

	<p>Evaluation (2+2 or 1+3 or 1+1+2 marks)</p> <ul style="list-style-type: none"> • Discussion of impact on fishing and tourist industries and how their output might be affected. • Discussion of magnitude of project; just 5% of UK energy needs so may not have massive impact / discussion of the significance of 30 000 jobs created to the local or national economy. • Accept idea of an opportunity cost to the tidal barrage / this may be referred to in a movement along the PPF curve. • Unemployed resources may be used up and so increasing output closer to its production possibility potential rather than cause a shift the curve outwards / so that it is closer to full employment level of output. • Discussion of time period: it may take many years to build / but the impact is likely to be over 120 years / many of the 30 000 jobs created may be short term. • Discussion of funding: the overseas funding suggests income stream from the project will go abroad / accept macro arguments on impact on trade balance. • Discussion that there might be no change to the production possibility frontier since renewable energy is just replacing non-renewable energy power stations. • Tidal barrage may be unproven technology. 	
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Question Number	Answer	Mark
<p>18</p>	<p>KAA = 6 marks</p> <ul style="list-style-type: none"> • Definition of opportunity cost (value of next best alternative foregone) (1 mark). • A general comment that fees have increased and so leading to an increase in opportunity cost (1 mark). • Data reference: tuition fees are now £9000 a year / increased from £3,290 to possibly £7000 or £9,000 a year / monthly repayments e.g. £30 to £293 (1+1 marks). • Examples of opportunity cost include what they could use the fees for: for example, motor vehicle / holiday / clothing / loss of savings (1+1 marks). • Example of opportunity cost include alternative use of the interest payments of the student loan (1 mark). • Examples of opportunity cost in terms of what they could use their time for: loss of potential earnings from work / loss of time to travel and see the world / loss of social time (1+1 marks). • Accept related comments for example, students from low income families may have lower opportunity cost / since receive grants up to £3,250 per year (1+1 marks). • Diagram showing opportunity cost by use of a production possibility frontier (budget line) where there is a movement along it / opportunity cost identified /with relevant axes such as tuition fees and an alternative use of the money (1+1 marks). • Accept comment that opportunity cost may be low since not many jobs available (1 mark). <p>NB: award a maximum of 5 marks if no reference to the information provided.</p>	<p>(6)</p>

Question Number	Answer	Mark
19(a)	<p>KAA = 4 marks</p> <ul style="list-style-type: none"> • Definition of opportunity cost (value of next best alternative foregone) (1 mark) • Reference to the increase in spending on NHS (£58.5 billion to £115 billion or £127 billion over the period or 96/97 per cent increase) (1 mark). • Examples of opportunity cost: (1+1 marks or 2 marks). <ul style="list-style-type: none"> ➤ Lower taxes / which could increase incentive to work. ➤ More funds available for education or other areas of government spending / so improving quality of education. ➤ Less government borrowing / so placing less debt on to future generations or paying lower debt interest. ➤ Discussion of spending in different areas of the NHS. e.g. more funds for managers and less on patient care. • Production possibility frontier diagram depicting opportunity cost by movement along the curve/relevant axes e.g. healthcare spending versus other areas of government spending (1+1 marks) 	(4)

Question Number	Answer	Mark
19(b)	<p>KAA 6 marks</p> <ul style="list-style-type: none"> • Definition of production possibility frontier (the maximum output potential for an economy when all its resources are fully / efficiently employed) (1 mark) • Diagram depicting an outward shift in the Production possibility frontier (Up to 3 marks) <ul style="list-style-type: none"> ➢ Original PPF (1) ➢ Outward shift of PPF or movement along PPF (1) ➢ Labelling of PPF (Some appropriate labelling of axes e.g capital versus consumer goods or private versus public sector; accept health care versus non health care) (1) <p>NB: Cap diagram at 2 marks if the PPF is not shifted out.</p> <ul style="list-style-type: none"> • The increase in healthcare provision will lead to a healthier / more productive workforce / especially as it is free at point of consumption so all can use / less absenteeism from work / longer working life / more advanced technology(1+1+1 up to 3 marks) <p>NB: if no diagram offered award a maximum of 4 KAA marks.</p> <p>Evaluation (2+2 marks or 3+1 marks)</p> <ul style="list-style-type: none"> • Discussion of magnitude of the increase in government spending/data reference to healthcare as % of GDP. • Discussion of staff wages accounting for 40% of NHS budget so perhaps not much impact on PPF. • Discussion of spending on elderly patients or red tape which may not increase the PPF. • Discussion on how much spending on capital such as new buildings and machinery. • Figure 3 shows that productivity has fallen in the NHS so perhaps less impact on the PPF. • Short run and long run implications. It may take a long time for health care spending to impact on PPF/also there are budget cuts from 2011. • Discussion of whether government spending may have to fall elsewhere (opportunity cost) e.g. education and so PPF may not increase. 	(10)