1.4 Scarcity, Choice and the Production Possibility Frontier

AQA 7136 · Calculators not allowed · about 85 minutes · Write-in edition

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer all questions. Full sentences are required in questions worth 4 marks or more. Spend about 85 minutes in total on this pack.

1 State and briefly explain the three basic economic questions an economy must answer: what to produce, how to produce and for whom to produce, and link each to scarcity.

(Total for Question 1 is 4 marks)

2 A small island economy can produce only fish or coconuts. If it devotes all resources to fish it can catch 120 units; if all resources go to coconuts it can harvest 80 units. Suppose the economy moves from producing 90 fish and 20 coconuts to producing 70 fish and 40 coconuts. Calculate the opportunity cost of moving from the original point to the new point in terms of fish forgone per extra coconut gained, and state whether the movement is along the PPF assuming both points are on the curve. Show workings and give the numerical answer and unit.

(Total for Question 2 is 4 marks)

3 Evaluate the view that an outward shift in a country's production possibility frontier is primarily caused by increases in capital investment rather than by improvements in technology. You should make use of diagrams, discuss both sides of the argument, consider the size and timing of effects and distributional issues, and give a supported conclusion.

(Total for Question 3 is 25 marks)

4 Distinguish between opportunity cost and money cost, using a short example involving a farmer choosing between planting wheat and barley on the same land.

(Total for Question 4 is 4 marks)

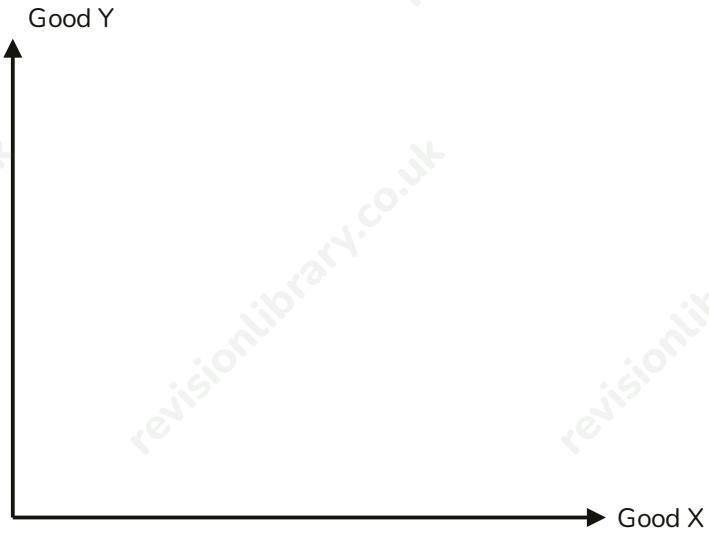
5 Define the four factors of production (land, labour, capital, enterprise) and give one clear UK example of each.

(Total for Question 5 is 4 marks)

6 Explain the distinction between positive and normative economic statements, and give one short example of each about government spending on education in the UK.

(Total for Question 6 is 4 marks)

7 Draw a production possibility frontier (PPF) and show an outward shift of the curve. In the prompt describe what the student should draw: original concave PPF and a new concave PPF shifted outwards in parallel (or generally outward), label old curve PPF1 and new curve PPF2, and mark a point on PPF1 and its feasible improvement on PPF2. Award marks for correct labelling, correct direction of outward shift and an explanation linking the shift to growth sources such as increased capital or technology.



(Total for Question 7 is 5 marks)

8 Draw a production possibility frontier (PPF) and show an inward shift of the curve. In the prompt describe what the student should draw: original concave PPF and a new concave PPF shifted inwards, label PPF1 and PPF2, mark a point on PPF1 that becomes infeasible on PPF2, and explain a cause such as natural disaster or large emigration reducing productive capacity. Award marks for correct labelling, correct inward shift direction and valid cause explanation.



(Total for Question 8 is 5 marks)

Mark scheme · 1.4 Scarcity, Choice and the Production Possibility Frontier

Question 1

what to produce: which goods and services to make given limited resources	**B1**
how to produce: choice of techniques and factor combinations to use the scarce resources efficiently	**B1**
for whom to produce: how output is distributed among individuals or groups in society	**B1**
each explanation linked to scarcity and the need to choose	**B1**

Answer: What to produce: which goods and services should be made given scarce resources. How to produce: which combination of labour, capital and technology should be used to produce those goods efficiently. For whom to produce: how the output is distributed between households, firms and groups, deciding who gets what.

Question 2

method: fish forgone = 90 - 70 = 20; coconuts gained = 40 - 20 = 20; compute fish forgone per coconut = 20 / 20	**M1**
answer: 1 fish forgone per extra coconut, awrt 1 fish per coconut	**A1**
state that if both points lie on the PPF the movement represents an efficient reallocation along the PPF, showing the trade-off/opportunity cost	**B1**
units: fish per coconut explicitly stated	**B1**

Answer: Fish forgone = 20; coconuts gained = 20; opportunity cost = 20/20 = 1 fish forgone per extra coconut. If both points are on the PPF, this is a movement along the PPF showing the trade-off.

Question 3

Level 1 Basic explanation of how PPF can shift outwards, with limited analysis. May identify either capital investment or technology as a cause with little development. Little or no diagram use and weak or no evaluation.	**1-5**
Level 2 Reasoned explanation of how both capital investment and technological improvement can shift the PPF outwards. Uses a simple diagram correctly and provides some analysis of timing and magnitude of effects. Limited evaluation, perhaps noting one weakness of the 'primarily capital' claim.	**6-10**
Level 3 Detailed analysis comparing capital investment and technological improvement as drivers of PPF shifts. Good use of diagrams showing outward shift, discussion of relative magnitude, speed, and sustainability of effects, consideration of distributional consequences and potential crowding out, and a clear, supported judgement.	**11-15**
Level 4 Detailed, well-developed analysis of both capital investment and technological improvement, with accurate diagrams and clear UK-relevant or other real world application. Balanced evaluation considering timing, magnitude, sustainability, crowding out and distributional effects, with a tentative supported judgement.	**16-20**
Level 5 Comprehensive and sustained analysis of capital investment and technological improvement as drivers of PPF shifts, integrating accurate diagrams and well-chosen examples throughout. Evaluation weighs the relative importance of each driver, considers interdependence, timing, magnitude and distributional consequences in depth, and reaches a fully supported, balanced conclusion on which is primarily responsible for outward PPF shifts.	**21-25**

Indicative content:

- Diagram: draw PPF shifting outwards from PPF1 to PPF2 and label; show how either more capital or better technology shifts the curve.
- Argument that capital investment primarily causes outward shift: increases productive capacity by adding machinery, infrastructure and factories; direct increase in factor inputs; examples such as new transport infrastructure raising output possibilities; capital accumulation can be targeted to sectors with large output potential.
- Argument that technological improvements primarily cause outward shift: raise total factor productivity, allow more output from same inputs, can shift PPF outwards across many sectors simultaneously; examples such as digital adoption, automation and improved medical technology increasing both quality and quantity of output.
- Timing: capital investment often requires long construction times and may take years to raise capacity; technology can sometimes have rapid effects but also may require complementary capital and skills to realise benefits.
- Magnitude and sustainability: capital provides tangible capacity but can depreciate; technology may yield sustained efficiency gains but can be subject to diffusion lags and diminishing returns if not widely adopted.
- Crowding out and financing: publicly funded capital investment may raise interest rates or require higher taxes, potentially reducing private investment; conversely, policy that subsidises R and D can spur technology adoption without equivalent crowding out.
- Distributional impacts: capital investment may create regional winners (where infrastructure built) and losers; technology can displace workers and require reallocation, affecting income distribution.
- Interdependence: often both are needed, e.g. new technology may require capital investment to implement; capital without technological improvement may yield smaller gains than combined policies.
- Policy implications: balanced approach, supportive education and training to complement capital or technology, targeted investment in complementary assets, consideration of short-term versus long-term goals.
- Conclusion: judgement that neither factor alone is always primary; relative importance depends on country context, existing capital stock, human capital and institutional capacity; give a supported view, e.g. for a capital-poor developing economy capital investment might be primary, while for an advanced economy productivity-enhancing technology may matter more.

Question 4

defines opportunity cost as the value of the next best alternative forgone	**B1**
defines money cost as the explicit monetary expenditure or price paid	**B1**
example: if farmer plants wheat, opportunity cost is the barley output forgone	**B1**
contrast: money cost would be seed, fertiliser and labour payments for wheat, which are cash expenses rather than the value of forgone barley	**B1**

Answer: Opportunity cost is the value of the next best alternative forgone, e.g. the barley yield and revenue sacrificed when the farmer plants wheat instead. Money cost is the actual cash payments for inputs to grow wheat, such as seed and fertiliser.

Question 5

land: natural resources, example e.g. farmland in East Anglia	**B1**
labour: human effort, example e.g. nurses in the NHS	**B1**
capital: man-made aids to production, example e.g. factory machinery in a UK car plant	**B1**
enterprise: organisation and risk-taking by entrepreneurs, example e.g. a tech startup founder in London	**B1**

Answer: Land: natural resources such as farmland in East Anglia. Labour: human effort such as NHS nurses. Capital: man-made equipment such as machinery in a UK car factory. Enterprise: the entrepreneur who organises and takes risk, such as a tech startup founder in London.

Question 6

defines positive statement as objective and testable about what is, was or will be	**B1**
defines normative statement as value judgement about what ought to be	**B1**
gives a positive example, e.g. 'A 5% increase in education spending will raise school capital investment by £400 million' (testable, fact claim)	**B1**
gives a normative example, e.g. 'The government should increase education spending to reduce inequality' (value judgement)	**B1**

Answer: Positive: objective, testable claim, e.g. 'A 5% rise in education spending will increase school capital investment by £400 million.' Normative: value judgement, e.g. 'The government should increase education spending to reduce inequality.'

Question 7

original PPF labelled PPF1 and new curve labelled PPF2	**B1**
PPF2 correctly drawn to the right/outside of PPF1 indicating outward shift	**B1**
point marked on PPF1 and a higher feasible point marked on PPF2	**B1**
arrow showing direction of outward shift	**B1**
explanation linking outward shift to economic growth	**B1**
drivers, e.g. more capital, improved technology, larger skilled labour force	

Question 8

original PPF labelled PPF1 and new curve labelled PPF2	**B1**
PPF2 correctly drawn to the left/inside of PPF1 indicating inward shift	**B1**
point on PPF1 marked as now outside PPF2	**B1**
arrow showing direction of inward shift	**B1**
explanation giving a valid cause, e.g. natural disaster, loss of capital, emigration reducing labour, or war	**B1**