

Short answer questions (SAQs)

At the Economic Assessment Centre (EAC) candidates will be asked to answer ten questions. You will have 30 minutes. All questions carry the same marks. You may use freehand diagrams where you wish, but these must be clear, labelled and explained as required. Here are some examples of the type of questions you may be asked, with model answers.

Question 1. How do economists define efficiency for an economy? Why do markets not achieve it and when is it not desirable?

Pareto efficiency occurs when it is impossible to make anyone better off without making someone else worse off.

[50%]

A market economy would be Pareto efficient if there is everywhere perfect competition (including for all inter-temporal contingencies) and no externalities. This idealised state is never reached due to dis-equilibrium, imperfect competition, transactions costs, externalities, imperfect information, public/collective goods and other 'missing' markets.

[25%]

As Pareto inefficient means that someone can be made better off without anyone being made worse off. It is commonly accepted that such inefficient outcomes are to be avoided. But not every Pareto efficient outcome will be regarded as desirable. Ethics, equity and feasibility are commonly as important

[25%]

Question 2. What is the formula for point elasticity of demand? What is the range of elasticity over a straight-line demand curve? List the major determinant of price elasticity.

Point elasticity of demand applies when the price change is small. Its formula is:

$$\begin{aligned}\varepsilon &= (-) \frac{\Delta X / X}{\Delta P / P} \\ &= (-) \frac{\Delta X}{\Delta P} \frac{P}{X}\end{aligned}$$

where X and P represent the initial quantity and price respectively, and the triangle means 'change in'.

Strictly the change should be infinitesimal, or $\hat{X}/\hat{P} = dX/dP$

The formula indicates that point elasticity can be calculated by multiplying the inverse of the slope of the demand curve at a particular point by the corresponding ratio of P to X - hence the term 'point elasticity'.

[50%]

A straight-line demand curve has a constant slope, but the elasticity will change at every point. The elasticity increases as the price increases. At price $p=0$, elasticity=0; as p rises, elasticity is initially less than unity. As p continues to rise elasticity hits (minus) unity, and then becomes greater than unity. Eventually elasticity grows to infinity where the demand curve hits the y-axis (zero consumption).

[25%]

The major determinants of price elasticity is:

- substitutability - the ease with which one good can be substituted for another. The more and closer substitutes available for a good, the more elastic the demand tends to be.

[25%]

NB degree of necessity or luxury is not such a good answer but if clearly linked to substitutability marks may be given.

Question 3. What is the opportunity cost of owning a bar of gold?

Opportunity cost is the cost of something in terms of the best alternative forgone.

[25%]

Gold is an extremely durable asset and historically a good 'store of value'. Current consumption is forgone by owning gold, and the timing of consumption may have a utility, but the value of the gold is not 'lost' i.e. wealth is transferred to the future.

[25%]

There are other financial assets available for carrying wealth through time; hence the return available from these other assets (dividends, interest) is forgone by holding gold.

[25%]

Part of the overall return to holding gold will depend on movements in the price of gold. So, the expected capital appreciation on gold and other assets would have to be compared to see if the expected gain from holding wealth in gold exceeds the expected overall opportunity cost.

[25%]

Question 4. Give economic reasons why banning the sale of ivory might endanger elephants as a species.

By making it, in effect, illegal to rear elephants as a 'cash crop' this decreases the incentive to breed and protect elephants as an asset. It may also decrease the return to protecting elephants from poachers.

[50%]

Banning sales will reduce ivory supply and could drive-up its price. Hence increasing the incentive to poach elephants.

[25%]

The banning of ivory sales may reduce its demand by increasing awareness of ethical considerations. But this may not result in more elephants; there would certainly be less not more cows if the sale of dairy and beef products were banned!

[25%]

Question 5. What are likely to be the short-run and long-run effects on price of levying a tax on the profits of a perfectly competitive industry?

Post-tax profit will still be greatest when pre-tax profit is maximized. That is, as a profit tax does not affect variable costs, or revenues, the profit maximizing output will be unaltered. Hence, the price will not be affected in the short-run.

[50%]

If the industry was earning zero pure/normal profits before the tax, then it will be earning negative/sub-normal profits after the tax. Firms will thus leave the industry in the long-run until output has decreased enough to raise price back to Average Total Cost enough to allow zero/normal profits to be earned again.

[50%]

Question 6. Describe the difference between adaptive and rational expectations in relation to inflation?

Adaptive expectations adjust to inflation on the basis of current and past inflation. Hence, if inflation is increasing expectations will tend to lag behind the current level of inflation, depending on the weights given to past and present values.

[50 %]

In rational expectations all available information is used to anticipate changes in inflation, if information is unbiased and agents rational then on average expectations will equal the actual rate.

[50%]

Question 7. Explain what happens to the UK exchange rate if domestic interest rates rise? Specify an assumption that you have made in your reasoning.

A positive interest rate difference will quickly attract 'footloose' capital to take advantage of higher interest rates in the UK. The demand for sterling, and sale of other currencies, will drive up its value against other currencies (if more ambiguous terms such as 'appreciation' or 'up or down' is used there should also be an indication that this denotes the strengthening of the pound).

[75%]

Inflationary and exchange rate expectations do not offset the expected interest differential.

[25%]

Question 8. Is street lighting a public good and would it be sensible to charge for its use?

Public goods are non-rival and non-excludable. Street lighting is non-rival, but tolls could be charged for its use, so it is not a pure public good.

[50%]

Tolls, unless through a technology such as Global Positioning System (GPS), would have high transaction costs as barriers to non-paying vehicles would have to be in place. Also, unless there was a mechanism to turn the lights on and off when in use or not, there is no marginal costs for the use of the lighting, hence a positive charge would mean a Pareto welfare loss. But alternative funding could also cause a welfare loss unless it is funded by a lump sum tax that everyone was willing to pay for the lighting.

[50%]

Question 9. An econometrician obtains data on the amount of income tax evaded by a set of individuals. A regression analysis generates the following fitted equation (t-stats beneath the coefficients):

$$\log E = 1.74 + 0.74 MRT + 0.84 \log Y - 0.5 F$$

5.44
1.26
3.11
-4.23

where:

E = amount of income tax evaded

MRT = marginal tax rate

Y = income

F = fine per £ of evaded tax.

Describe the results from this fitted equation.

The observations that can be made are:

The signs on the explanatory variables suggest that tax evasion increases with the marginal rate of tax, increases with the level of income, falls with the level of fine.

[50%]

Income and fine are statistically significant (the t-statistic is above 2). The marginal rate of tax is insignificant.

[25%]

The specification is logarithmic in E and Y. Therefore, the elasticity of evasion with respect to income is less than 1. A smaller proportion of income is evaded as income rises.

[25%]