Answer Guide

Midterm 2, Fall 2018

2. (e)

Perfectly elastic long-run supply results from the industry being able to scale freely, without the firm cost structure changing. This happens when: All firms have the same production technology, Input supply is perfectly elastic (input prices don't change as the industry scales) and, there are no barriers to entry.

3. (e)

Take q=1: ATC=TC/q=TC = 20 and AVC=VC/q=VC =4

Since TC = FC + VC, FC= TC=VC = 20-4= 16

4. (b)

In the long run P^{LR} = minATC = 11

5. (c)

When p = 11, the corresponding quantity given by the MC curve is q = 4.

6. (b)

When the supply curve (LR) is a horizontal line at p=11, it intersects D1 at Q=600.

7. (c)

If Q=600 and q^{LR} = 4, then N = 600/4 = 150

8. (d)

The sort run market supply is the firm-level MC (for q>0) and p=0 for q=0. Multiply the MC line by N=150 to get the SR market supply. Ex: when p=7, the MC curve gives q = 2 and N=150, Q= 2*150=300. So, SR for p=7 is 300.

9. (a)

SR supply intersects D2 at p = 7 and Q = 300.

For p =7, the individual firm MC corresponds to q = 2 and, at that point, ATC = 13 and MC = 7.

Profits = q*(MC(q)-ATC(q)) = 2*(7-13) = -12

10. (e)

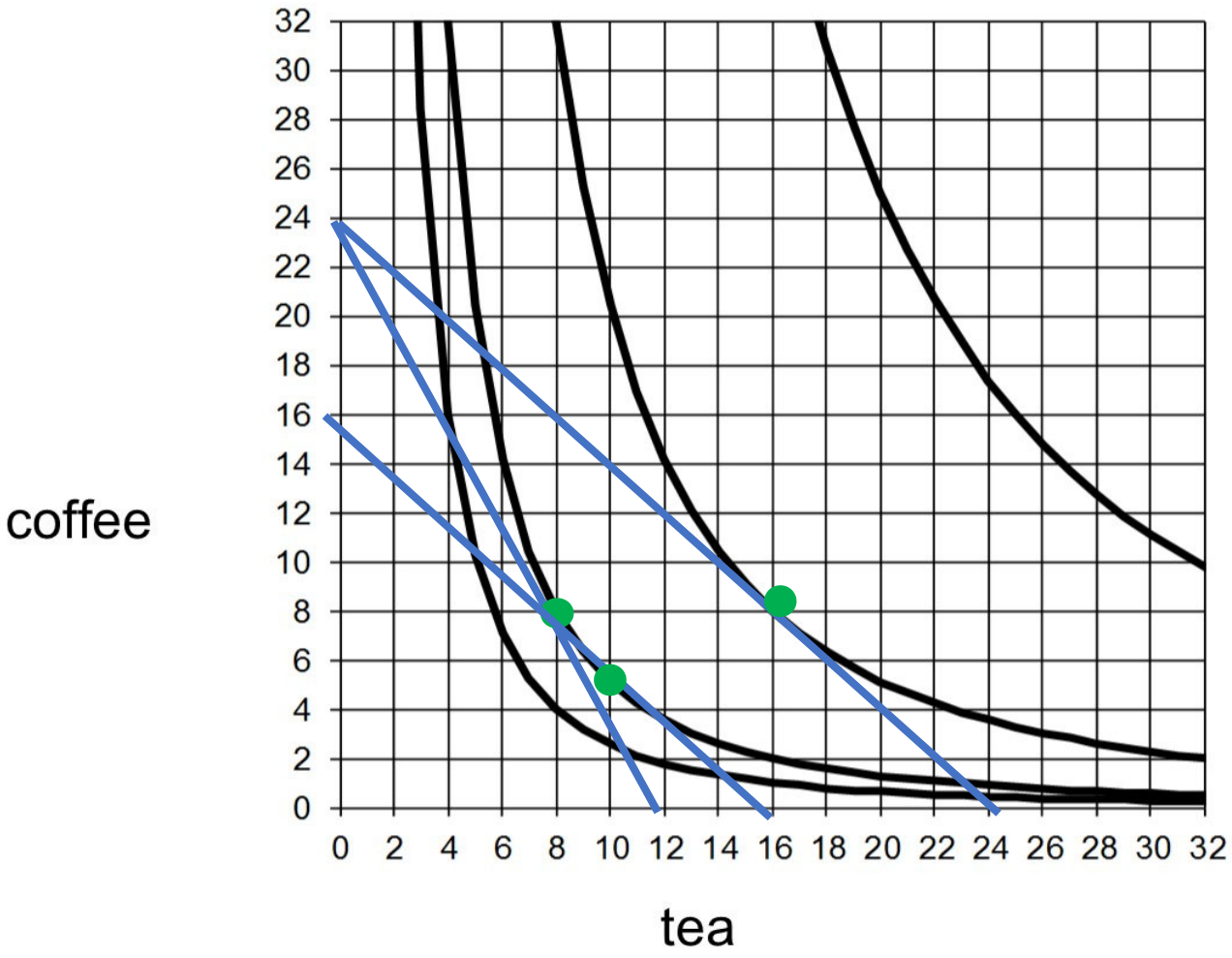
Find the indifference curve that goes by (8,32) and test for each alternative (a)-(e) which one is also on that indifference curve.

11. (c)

Opportunity cost of Tea in terms of coffee = P^{Tea}/P^{coffee} = 2/1 =2

12. (d)

Draw the budget constraint: the straight line from (0,12) to (24,0). This line touches the second IC at (8,8).



13. (c)

If the price of tea falls to 1, the BC becomes a line from (0,24) to (24,0). This line touches the third IC at (16,8).

The quantity of tea consumed then goes from 8 to 16, an increase in 8 units.

14. (d)

The income effect is the change in quantity of tea resulting from the increase in real income due to the price increase, holding the opportunity cost (slope) constant. Find the line that is parallel to the new BC (same opportunity cost) that touches the same IC (2) as (8,8). This will be the line from (16,0) to (0,16). And, it touches the IC at (10,5). So, going from 10 to 16 units of tea is the income effect: 6 units.

15. (c)

The curvature of the ICs is such that the curve is less and less steep as we increase the amount of tea. Hence, the slope (MRS between tea and coffee) is diminishing in the quantity of tea.

16. (d)

When a country becomes an exporter, the demand curve perceived by producers is the sum of the domestic and international demand. Hence, this can be represented by a shift outward of the demand curve, resulting in an increase in the equilibrium price that increases the producer surplus and reduces the domestic consumer surplus.

17. (b)

The socially efficient quantity is R, while the market quantity is T. Going from R to T, from the overall externality of BGJC, consumers loose BFJC to producers (transfer) while FGJ becomes a deadweight loss.

18. (d)

With the optimal Pigouvian tax of $3 (same as the external cost), the quantity would be the socially efficient quantity R and the supply with the tax corresponds to the SMC curve. Government revenue is then R*Distance between MC and SMC = area BFHC.

19. (d)

In a system with tradable allowances, the value of market for allowances is the same as the government revenue from a Pigouvian tax. This is because the price of the allowance will be $3 when quantity is capped at R.

20. (e)

Total surplus without trade is AHR. With trade and P=R, domestic production will be 0. The producer surplus will be integrally transferred to consumers (0 net effect) and total CS will be the triangle AYR. So, the change in total surplus is the difference between AYR and AHR = RHY.

21. (c)

With that tariff, the world price faced by consumers is equal to K. At that price, imports are U-S. The government revenue from the tariff is then Imports*tariff = LNXV.

22. (c)

With free trade, total surplus is AHR. The tariff gives LHN to producers and LNXV to the government RLV and NXY disappear from the total surplus and are, therefore deadweight losses.

23. (a)

When there are increasing returns the PPF has curvature displaying increasing returns to specialization. The more Robinson catches fish, the better he becomes at it (same for coconuts). So, there are gains to specializing and, therefore to trade even if both parties are identical.

24. (d)

It is socially efficient to build the national park if and only the sum of the willingness to pay of all inhabitants is greater or equal to the cost. The sum of the WTP here is 8+6+3+1 = 18.

25. (a)

If someone eats the sandwich, it will be gone and, I can't eat it too. The same is not true for the other goods. If a person hears a tornado siren, listens to a song online or the radio, this doesn't stop me from doing the same.

26. (d)

This is the definition of a public good. Has to satisfy both conditions.

27. (b)

One of the things that result from a quota policy is a transfer of surplus from consumers to producers. So, it is of interest for producers to lobby for this policy.

28. (b)

The substitution effect always moves in the opposite direction as the price change. Hence, if the price falls (-), the substitution effect is positive (+). An inferior good is a good that has a negative relationship between income changes and quantity changes, hence displaying negative (-) income effects. So, the two effects move in different directions for inferior goods.

29. (c)

If a good generates positive externalities, the SMB of the good is a line parallel to the PMB (demand curve) at a distance equal to the external benefit of the good – while private and social marginal costs are not affected (iii). This results in a socially optimal quantity that is larger than the market quantity (iv). Hence, a subsidy would increase quantity and improve the allocation and resulting surplus (i).

30. (a)

Beyonce has an opportunity cost of producing apples of 2/8 = 1/4. And, Ariana has an opportunity cost of apples of 4. Hence, Beyonce has a lower opportunity cost of specializing in apples – an absolute advantage in that production. She also can catch more apples (8) than Ariana (1) in an hour – has an absolute advantage.

31. (e)

Ariana's PPF is a line from (10,0) to (0,40). This line touches U1 at (5,20) – Ariana's consumption in autarky.

Beyonce's PPF is a line from (40,0) to (0,10). This touches U1 at (20,5) – Beyonce's consumption in autarky.

32. (c)

By specializing in oranges, Ariana can produce 40 oranges a day. By specializing in apples, Beyonce can produce 40 apples a day. So, the overall PPF becomes a line from (40,0) to (0,40) and touches each singer's U3 at (20,20) – their consumption with trade.

33. (b)

(i) is not true because the external cost is larger than the external and the quantity effect of overproduction will dominate.

(ii) is true because with that tax the external cost will be equal to the external benefit and the effects will cancel, achieving the socially efficient quantity.

34. (d)

With cap and trade, the government decides a quantity to cap production at but, allows firms to trade allowances (rights to produce each unit). Market mechanisms then play a role in achieving a price for the allowance and guaranteeing efficiency in production (firms with lowest costs buy allowances and produce).