

1. State whether True, False or Uncertain. Give reasons for your answer.
 - i) A utility maximizer will always choose a bundle at which his indifference curve is tangent to his budget line.
 - ii) Given the market rate of interest as 10 percent, an individual will prefer Rs. 100 today to Rs. 110 tomorrow.
 - iii) Imposition of a price ceiling above the equilibrium price level will lead to more people consuming that good.
 - iv) When the price of a good rises and income remains constant, there is a substitution effect on demand but there cannot be an income effect.

2. The number of college prospectuses demanded for a certain college in Delhi University is given by $Q_d = 100 - p$, where p is the price of prospectuses measured in rupees. The supply function is given by $Q_s = p$. The university administration manages to enforce a price ceiling of Rs. 40 per prospectus. What is the effect on total consumers' surplus?

3. A subsidy is a negative tax. The Delhi government subsidizes bus rides for the students by issuing extremely low-cost bus passes. Are the students and providers of buses better or worse off?

4. The long run supply function of two-room apartments near the university campus is given by $q = 18 + 2p$, and the long run demand function is given by $q = 114 - 4p$ where p is the rental rate in rupees per month. The Delhi Government made it illegal to rent an apartment for more than Rs. 10,000 per month; at the same time, to avoid a housing shortage for students, they agreed to pay landlords enough subsidy to make supply equal to demand. How much would the monthly subsidy per apartment have to be to eliminate excess demand at the ceiling price?

5. Explain diagrammatically the income and substitution effects for a price fall of a commodity.

6. T/F The demand for orange juice is likely to be more elastic: than the demand for a particular brand of orange juice?

7. T/F If Billy's income elasticity of demand for maggi noodles is -0.5 and his income elasticity of demand for apples is 1.2, then maggi noodles are a normal and apples inferior?

8. T/F If the cross-price elasticity between natural gas and heating oil is estimated to be 2.3. and cross-price elasticity between natural gas and electricity is estimated to be -0.8, then natural gas and heating oil are substitutes and natural gas and electricity are complements?

9. Delhi Police has two different methods to deal with illegal drug use. First, it has a "war on drugs", with the idea of keeping illegal drugs out of the country. Second, the "Say No to Drugs" campaign has been used to make individuals more aware of the harmful effects of drugs. Use supply and demand to analyze the effects of these two separate policies.

10. Your favorite magazine offers one year subscriptions for \$42 and two year subscriptions for \$83. If the interest rate is 5%, which one is a better deal? Explain your answer.

11. Explain diagrammatically the income and substitution effects of a price fall for a commodity. Show how commodities can be classified into normal, inferior and giffen goods using substitution and income effects.
12. What is the marginal rate of substitution? Draw a consumer's indifference curve for mangoes and coffee assuming they are both normal goods. Explain why the indifference curve will not cut the axis. Describe and explain four properties of these indifference curves.
13. Ananya divides her income between wine and cheese (both of which are normal goods). Frost in the grape growing areas causes a large increase in the price of wine in India.
 - (a) Show the effect of the frost on Ananya's optimal consumption point assuming that the substitution effect outweighs the income effect for cheese.
 - (b) Show the effect of the frost on Ananya's optimal consumption point assuming that the income effect outweighs the substitution effect for cheese.
 - (c) If the price of wine is Rs. 300 a bottle and cheese costs Rs. 600 a kg, what is the marginal rate of substitution at the optimum?
14. True / False / Uncertain: If there is a fall in the market rate of interest, a borrower will continue to be a borrower. Explain.
15. Derive the labour supply curve for an individual when the income effect of a wage increase is larger than the substitution effect.
16. Amar is completely indifferent between red apples and green apples; the colour makes no difference to him. Draw indifference curves for Amar's preference for green apples and red apples. Suppose his income is Rs. 200, and the price of red apples is Rs. 20 per kg and the price of green apples is Rs. 25 per kg. How much of the two commodities will Amar consume?
17. The price of coffee is Rs. 5 and the price of chips is Rs. 10. What is Amar's marginal rate of substitution of chips for coffee in equilibrium?