**UNIVERSITY OF BOTSWANA**

**DEPARTMENT OF DISTANCE EDUCATION**

**BUSINESS DEGREE PROGRAMME**

**COURSE CODE: ECO2112012Tutorial set 1**

**COURSE TITLE: INTERMEDIATE MICROECONOMICS FOR BUSINESS**

1. If the prices of all products are rising at 20 per cent per year and your sponsor gives you a 20 per cent living allowance increase, are you better off, worse off, or equally well off in comparison with your situation a year ago?
2. *True or false*: If you know the slope of the budget constraint (for two goods), you know the prices of the two goods. Explain.
3. Discuss four (4) properties of indifference curves. Use graphs to explain where appropriate.
4. Explain in your own words how the slope of an indifference curve provides information about how much a consumer likes one good relative to another.
5. With the help of a diagram, explain how the marginal rate of substitution of good M for good N varies along an indifference curve.
6. Suppose M and N are normal goods. Using appropriate diagrams derive the demand curve for M.
7. What conditions characterize consumer optimum? State and explain in two different ways.
8. Consider the case of Joe, a caffeinated-cola drinker. He spends his entire soft drink budget on coke-cola and jolt cola and cares only about the total caffeine content of what he drinks. If jolt has twice the caffeine of coke, and if jolt costs P1/can and coke costs P0.75/can, how will Joe spend his soft drink budget of P15/week?
9. Suppose Joana always uses exactly two parts of butter on each piece of toast. If toast costs P0.10/slice and butter costs P0.20/pat, find Joana’s best affordable bundle if she has P12/week to spend on toast and butter. Suppose Joana starts to watch her cholesterol level and therefore alters her preference to exactly one pat of butter on each piece of toast. How much toast and butter would Joana then consume each week?
10. Angry, an aggressive skier, spends her entire income on skis and bindings. She wears out one pair of skis for every pair of bindings she wears out.
11. Graph Angry’s indifference curves for skis and bindings.
12. Now draw her indifference curves on the assumption that she is such an aggressive skier that she wears out two pairs of skis for every pair of bindings she wears out.
13. Suppose Angry has P3600.00 in income to spend on skis and bindings each year. Find Angry’s best affordable bundle of skis and bindings under both preferences described in (a and b) above. Skis are P480/pr and bindings are P240/pr.
14. Compare and contrast the income and substitution effects for a normal and an inferior good.
15. Using graphical approach derive the demand curve for a normal for aninferior good
16. Give two examples of what are, for most students, inferior goods?
17. For a normal good, illustrate graphically the total effect, the income effect and the substitution effect for:
18. Price increase
19. Price decrease
20. Define, write brief notes and illustrate the following concepts:
21. Budget constraint
22. Indifference curve
23. Marginal utility
24. Income-consumption curve
25. Price-consumption curve
26. An Engel curve
27. Giffen good
28. Demand Curve
29. Suppose that the marginal utility of the last pula Tawana spends on food is greater than the marginal utility of the last pula she spends on shelter. For example, suppose the prices of food and shelter are P1/kg and P2/sqr meter, respectively, and that the corresponding marginal utilities are 6 and 4. Show that Tawana cannot possibly be maximizing his utility.
30. Assume that utility in Bobonong is a Cardinal concept, and tomatoes (T) and phane (P) are the only two goods consumed. The data below indicates quantities and marginal utilities (MU) of these two commodities. Prices of Tomatoes and phane are P2/bag and P4/bag, respectively.

|  |  |  |
| --- | --- | --- |
| Quantity | MU(T) | MU(P) |
| 0 |  |  |
| 1 | 50 | 30 |
| 2 | 44 | 28 |
| 3 | 38 | 26 |
| 4 | 32 | 24 |
| 5 | 26 | 22 |
| 6 | 20 | 20 |
| 7 | 12 | 16 |
| 8 | 4 | 10 |
|  |  |  |  |  |  |

Advice the residents of Bobonong on consumption levels of tomatoes and phane that maximizes their welfare.

1. Marea has a weekly allowance of P10, all of which she spends on newspapers(N) and magazines (M), whose respective prices are P1 and P2. Her utility from these purchases is given by U (N) +V (M). If the values of U (N) and V (M) are as shown in the table below, is Marea’s utility maximized if she buys 4 magazines and 2 newspapers each week? If not, how should she reallocate her allowance?

|  |  |  |
| --- | --- | --- |
| Quantity | U(N) | U(M) |
| 0 | 0 | 0 |
| 1 | 12 | 20 |
| 2 | 20 | 32 |
| 3 | 26 | 40 |
| 4 | 30 | 44 |
| 5 | 32 | 46 |

1. Discuss the Ordinalist approach to utility maximization and graphically show the consumer’s optimum condition
2. Explain the concept of consumer surplus and then illustrate the following:
3. The measurement of consumer surplus
4. The change in consumer surplus when there is a price increase; a price decrease
5. Explain in detail the concepts of cross price and income elasticity of demand.
6. Discuss five determinants of the price elasticity of demand?

FROM PAST TESTS

**MULTIPLE CHOICE QUESTIONS**

Q1.



Which of the following statements is true about indifference curve U?

1. U is convex to the origin, which implies increasing MRS of coke for chips.
2. Since the level of utility is constant along U, market basket A is preferred over B.
3. Since the level of utility is constant along U, market baskets A and B are equally preferred.
4. Since the MRS of coke for chips isdiminishing, market basket B is preferred over A
5. None of the above

Q2. Thato has just bought four cans of coke on a hot summer day. It takes her 2 minutes to drink the first can of coke because she was very thirsty. It takes her 1 hour to drink the second can, 2 hours to drink the third. She decides she has had enough coke and gives the fourth to her friend. Which economic principle does this demonstrate?

1. The marginal rate of substitution for coke is diminishing
2. Coke is a normal good
3. The marginal rate of substitution for coke is increasing
4. The marginal utility of coke is diminishing
5. Neo is very generous and likes to share her food

Q3. Which one of the following is **not** a property of the budget line?

1. A price change causes the budget line to pivot/rotate
2. A change in income causes the budget line to shift
3. At equilibrium, the slope of the budget line is equal to the slope of the indifference curve
4. A budget line shows all combinations of goods that consumers can buy subject to constraints of prices and income.
5. None of the above

Q4. Suppose that a consumer’s utility function, defined over goods X and Y, yields the following marginal utilities: MUX= 40-5X and MUY= 30-Y. If PX = 10 and PY= 2 and Income =80, the optimal quantities of X and Y are given by:

1. X= 5 and Y =5
2. X=3.5 and Y=7.5
3. X=3.5 and Y=7.5
4. X=3 and Y=5
5. X=5 and Y=3

Q5. When a consumer’s income increases, the demand for good X decreases (ceteris paribus). This shows that,

1. Good X is a normal good
2. There is a positive relationship between the demand for good X and income
3. Consumers do not like good X
4. Good X is an inferior good
5. There is no relationship between the demand for good X and income

Q6. The factor which will result in a shift in the demand curve for X is:

1. Change in the income of the consumer
2. Change in the price of X
3. Change in the price of Y
4. Both (a) and (c) above
5. Both (a) and (b) above

Q7. For the demand curve shown, what is the total amount of consumer surplus if petrol is sold for P2 per litre?

1. 320
2. 500
3. 16
4. 40
5. 8

Q8. A 2 percent increase in the price of tea causes a 4 percent reduction in the quantity demanded of milk. What is the cross price elasticity of demand for milk with respect to the price of tea?

1. -2
2. -0.5
3. 6
4. 2
5. 0.

Q9. Based on the answer from question 5 above, one can conclude that

1. Milk and tea are complements and the cross price elasticity of demand is elastic
2. Milk and tea are complements and the cross price elasticity of demand is inelastic
3. Milk and tea are substitutes and the cross price elasticity of demand is elastic
4. Milkand tea are substitutes and the cross price elasticity of demand is inelastic
5. Milk and tea are normal goods and the cross price elasticity of demand is elastic

Q10. You run a pharmacy that sells a variety of toiletry and cosmetic products. You calculate the price elasticity of demand (PED) and find that:

**PED for body lotion >1**

**PED for tissues =1**

**PED for moisturizer <1**

Which is the correct interpretation of the PED values?

* 1. The PED for body lotion is elastic; the PED for tissues is inelastic; andthe PED for moisturizer is inelastic
  2. The PED for body lotion is inelastic; the PED for tissues is unitary elastic; andthe PED for moisturizer is inelastic
  3. The PED for body lotion is elastic; the PED for tissues is unitary elastic; and the PED for moisturizer is inelastic
  4. The PED for body lotion is elastic; the PED for tissues is unitary elastic; andthe PED for moisturizer is elastic
  5. none of the above

**SECTION 2(Answer any two questions)**

**Question 1**

1. Explain and graphically illustrate the total effect, income effect and the substitution effect for an inferior good when there is a price increase.**8 Marks]**
2. Explain what will happen to total revenue if the price of a product is increased in the inelastic part of the demand curve. **[4 Marks]**
3. As the owner of Senatla LTD, you have worked out that the price elasticity of the different goods you sell are as follows:

Good A : price elasticity of demand = 1.5

Good B: price elasticity of demand = 0.24

Good C: price elasticity of demand =1

Explain what you would do in terms of prices to maximize the revenue or profits at Senatla LTD. **[1 Mark each]**

**Question 2**

1. Briefly define the marginal rate of substitution with the aid of an indifference curve diagram. **[6 Marks]**
2. Given MUx = 40-5X, MUy = 30 – Y; Let Px = 5, Py = 1 and M= 10

Where M is money income

1. Find the optimal quantities of X and Y **[4 Marks]**
2. Illustrate your answer graphically **[2 Marks]**
3. Define consumer surplus and illustrate graphically how it is measured**[3 Marks]**

**Question 3**

1. Explain with the aid of indifference curves how the demand curve of an inferior good can be derived and how the shape thereof affects the quantity demanded if the price was to increase. **[6 Marks]**
2. Tshepho has two options: she can spend time in a bar spending P5.00 per an hour or she can spend the time in an internet café at the price of P20.00 per an hour. Tshepho’s utility function for internet (E) and bar (B) is as follows;

U (E, B) = B2 E.

Given that Tshepo’s total income is P200.00 and she spends all her income on the two items answer the following questions.

1. How many hours will she spend in the bar? **[3 Marks]**
2. How much money will she spend on the internet café? **[3 Marks]**
3. If the income falls to P150.00 what will be the optimal time to be spent in the internet café. **[3 Marks]**