



“Investing in Africa’s Future”

COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

NMEC 201: INTERMEDIATE MICROECONOMICS

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2025

LECTURER: Mr Mandewo

INSTRUCTIONS

Answer **Any FOUR** questions. Total possible mark is **100**.

Start **each** question on a new page in your answer booklet.

The marks allocated to **each** question are shown at the end of the question.

1. (a) What happens to the budget line if the price of good 2 increases, but the price of good 1 and income remain constant? **[5 Marks]**
 - (b) If the price of good 1 doubles and the price of good 2 triples, does the budget line become flatter or steeper? **[5 Marks]**
 - (c) Suppose that the government puts a tax of 15 cents a gallon on gasoline and then later decides to put a subsidy on gasoline at a rate of 7 cents a gallon. What net tax is this combination equivalent to? **[5 Marks]**
 - (d) Suppose that a budget equation is given by $p_1x_1 + p_2x_2 = m$. The government decides to impose a lump-sum tax of u , a quantity tax on good 1 of t , and a quantity subsidy on good 2 of s . What is the formula for the new budget line? **[5 Marks]**
 - (e) If the income of the consumer increases and one of the prices decreases at the same time, will the consumer necessarily be at least as well-off? **[5 Marks]**
2. (a) How much is \$1 million to be delivered 20 years in the future worth today if the interest rate is 20 percent? **[5 Marks]**
 - (b) As the interest rate rises, does the intertemporal budget constraint become steeper or flatter? **[5 Marks]**
 - (c) Would the assumption that goods are perfect substitutes be valid in a study of intertemporal food purchases? **[5 Marks]**
 - (d) A consumer, who is initially a lender, remains a lender even after a decline in interest rates. Is this consumer better off or worse off after the change in interest rates? If the consumer becomes a borrower after the change is he better off or worse off? **[5 Marks]**
 - (e) What is the present value of \$100 one year from now if the interest rate is 10%? What is the present value if the interest rate is 5%? **[5 Marks]**
3. (a) Substitution effect and income effect make up the total effect of a price change. Explain these concepts in detail. **[5 Marks]**
 - (b) You are required to demonstrate how to separate the two effects. **[5 Marks]**
 - (c) Intertemporal choice analysis can be analysed under static and dynamic analysis. You are required to unveil this concept and relate it to practical consumption behaviour. **[15 Marks]**
4. (a) If we observe a consumer choosing (x_1, x_2) when (y_1, y_2) is available one time, are we justified in concluding that $(x_1, x_2) \succeq (y_1, y_2)$? **[5 Marks]**
 - (b) Consider a group of people A, B, C and the relation “at least as tall as,” as in “A is at least as tall as B.” Is this relation transitive? Is it complete?

[5 Marks]

(c) A college football coach says that given any two linemen A and B, he always prefers the one who is bigger and faster. Is this preference relation transitive? Is it complete? [5 Marks]

(d) Could be a single indifference curve if preferences are monotonic?

[5 Marks]

(g) Explain why convex preferences means that “averages are preferred to extremes.” [5 Marks]

5. (a) If two goods are perfect substitutes, what is the demand function for good 2? [5 Marks]

(b) Suppose that indifference curves are described by straight lines with a slope of $-b$. Given arbitrary prices and money income p_1 , p_2 , and m , what will the consumer’s optimal choices look like? [5 Marks]

(c) Suppose that a consumer always consumes 2 spoons of sugar with each cup of coffee. If the price of sugar is p_1 per spoonful and the price of coffee is p_2 per cup and the consumer has m dollars to spend on coffee and sugar, how much will he or she want to purchase? [5 Marks]

(d) Suppose that you have highly nonconvex preferences for ice cream and olives, like those given in the text, and that you face prices p_1 , p_2 and have m dollars to spend. List the choices for the optimal consumption bundles. [5 Marks]

(e) If a consumer has a utility function $u(x_1, x_2) = x_1 x_2^2$, what fraction of her income will she spend on good 2? [5 Marks]

6. (a) Suppose asset A can be sold for \$11 next period. If assets similar to A are paying a rate of return of 10%, what must be asset A’s current price? [5 Marks]

(b) A house, which you could rent for \$10,000 a year and sell for \$110,000 a year from now, can be purchased for \$100,000. What is the rate of return on this house? [6 Marks]

(c) The payments of certain types of bonds (e.g., municipal bonds) are not taxable. If similar taxable bonds are paying 10% and everyone faces a marginal tax rate of 40%, what rate of return must the non-taxable bonds pay? [7 Marks]

(d) Suppose that a scarce resource, facing a constant demand, will be exhausted in 10 years. If an alternative resource will be available at a price of \$40 and if the interest rate is 10%, what must the price of the scarce resource be today? [7 Marks]

End of Exam