



ZCAS University

SEC 5161 ADVANCED MICROECONOMICS

TEST

20th OCTOBER 2023

TIME: 16:30 – 19:30 HRS

TIME ALLOWED: THREE HOURS (plus 5 minutes to read through the paper)

INSTRUCTIONS:

1. Section A: Question One in Section A is **compulsory**.
2. Section B: Answer Two (2) questions from this section.
3. This question paper carries a total of **100 marks**.
4. Statistical tables are provided at the end of the exam questions.
5. Candidates must **not turn this page** until the invigilator tells them to do so.

SECTION A: Question 1 is compulsory and must be attempted.

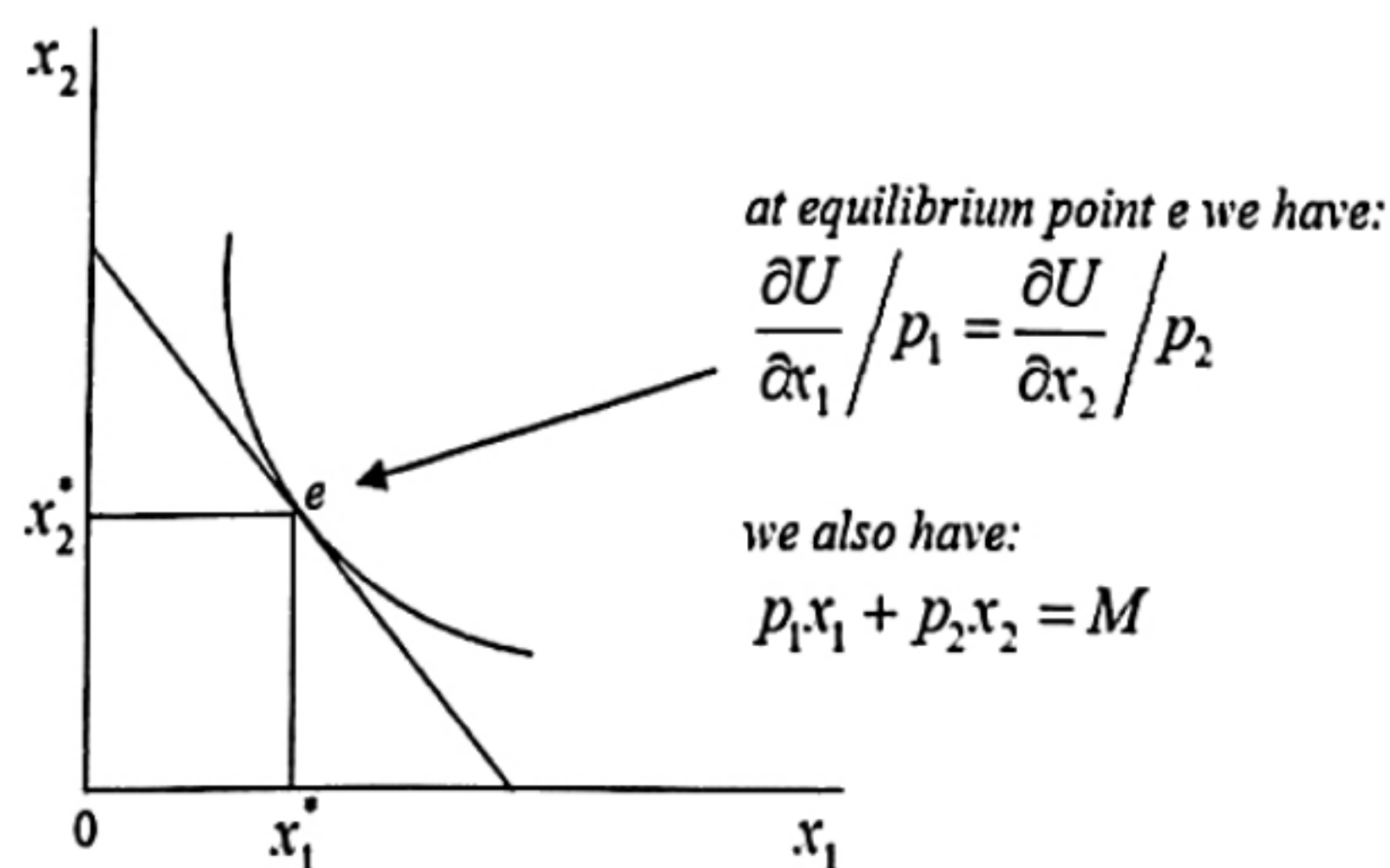
The economic theory of the consumer is a combination of positive and normative theories. Since it is based on a rational maximizing model it describes how consumers *should* choose, but it is alleged to also describe how they *do* choose. Some scholars (Thaler, 2003; Brown, 2013; Muzei, 2018) have argued that in certain well-defined situations many consumers act in a manner that is inconsistent with economic theory. In these situations, economic theory will make systematic errors in predicting behaviour. Contribute to this conversation through answering the questions below. Consider a consumer that abides by all the conventional assumptions made in consumer theory.

- i) Using a utility function in a Cobb-Douglas function form and the budget constraint below, derive and discuss the Marshallian demand functions for a two-goods market. [15 marks]

Utility function: $U(x_1, x_2) = x_1^\alpha x_2^\alpha$ $0 < \alpha < 1$; and budget constraint: $P_1x_1 + P_2x_2 = M$ where M is income, $(x_1 \ \& \ x_2)$ represents the respective goods and $(P_1 \ \& \ P_2)$ are the prices for the two goods.

Hint: Use graphical depiction in your discussion

- ii) Graphically discuss an interior and corner solution concept in Microeconomics. [5 marks]
- iii) In the elementary consumer choice model, the following property holds in equilibrium: the marginal utility of each good consumed divided through by its price is equalised across all goods:



- iv) What is the economic explanation of the above property? [5 marks]
- v) Why is the budget constraint assumed to be binding in equilibrium? [5 marks]

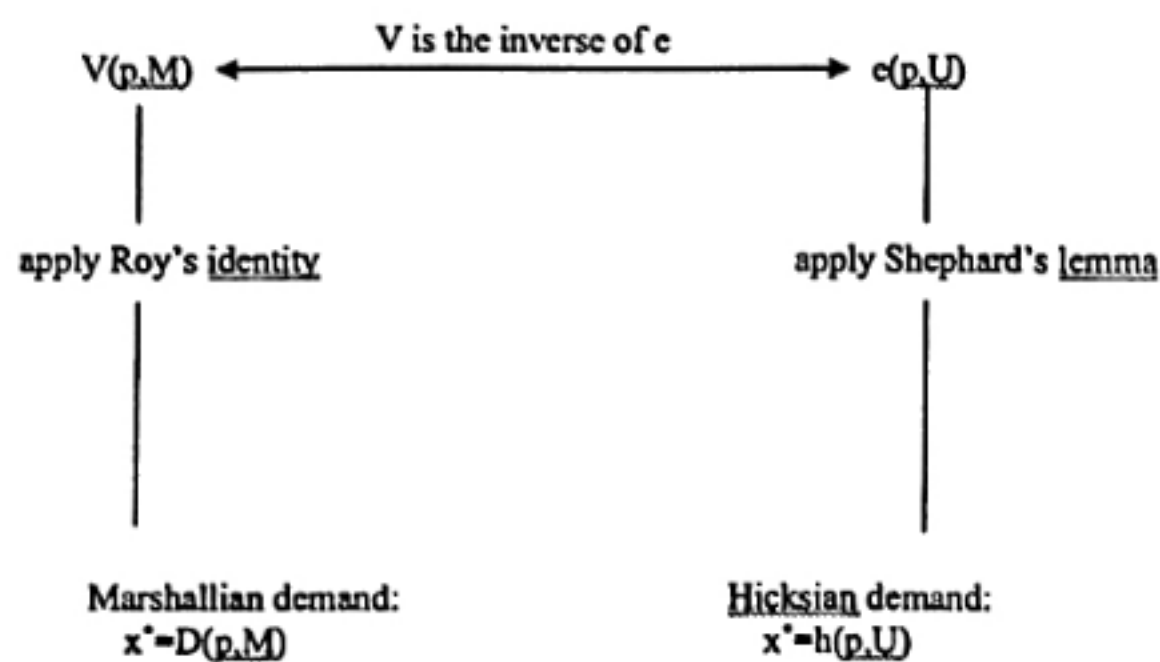
- vi) Using appropriate expressions, demonstrate how an indirect utility function can be derived. **[5 marks]**
- vii) Use the derived indirect utility function in question (vi) above, demonstrate how an expenditure function can be generated. **[5 marks]**
- viii) Use the expenditure function to derive and discuss the hicksian demand function for a good of your choice. **[10 marks]**

[Total: 50 marks]

SECTION B: Attempt any TWO questions in this section.

Question 2

Some key derivations under consumer theory can be summarised in the figure below: Help explain some parts by answering the questions that follow.



- i) Prove and briefly discuss the Roy's identity **[10 marks]**
- ii) In consumer theory, the indifference curve is assumed not to just be convex but strictly convex. Explain the implication [reasons] of assuming a strictly convex indifference curve. **[5 marks]**
- iii) What is the difference between the marshallian and hicksian demand functions **[5 marks]**
- iv) Use the lagrange approach to derive and discuss the optimal Marshallian demands in a two good Cobb-Douglas case. **[5 marks]**

[Total marks: 25 marks]

Question 3

- i) When first studying economics, it is natural simply to assume that a utility function exists. However, it is possible to construct such a function from the first principles. As a student of Microeconomic Theory for Policy, discuss the key assumptions made in building the concept of an indifference curve. [10 marks]
- ii) Indifference curves are said to be strictly convex. Discuss the implication of this property on the model solutions. [5 marks]
- iii) Under consumer behaviour, what would happen to the consumer's equilibrium condition when the price of one of the goods in the consumer's basket falls (assume that there are two goods in the consumer's basket of goods)? [5 marks]
- iv) "The consideration of opportunity cost distinguishes the view of cost structure between accountants and economists". Briefly discuss this thought. [5 marks]

[Total: 25 marks]

Question 4

- i) Musonda, a student of economics at the university of Zambia discovered that the consumer demand in a certain sector in Zambia was perfectly inelastic. Draw and explain this consumer demand curve. [5 marks]
- ii) With the nature of the demand curve in question (i) above, what is the likely market structure of this sector? [5 marks]
- iii) Discuss profit maximization in the market structure identified in question (ii) above. [5 marks]
- iv) Isoquants and isocosts are very important in the firm decision-making process. Explain how these two mechanisms are used in production decision of the profit seeking firm. [5 marks]
- v) The marginal cost curves always cut the average variable cost and the average cost curves at their minimum, briefly explain why the MC curve intersects the AVC and the AC curves at their respective lowest points? [5 marks]

[Total: 25 marks]

END OF TEST PAPER