

Indian Institute of Technology Roorkee
Mid-Term Examination Autumn 2023
HSS – 01 Economics

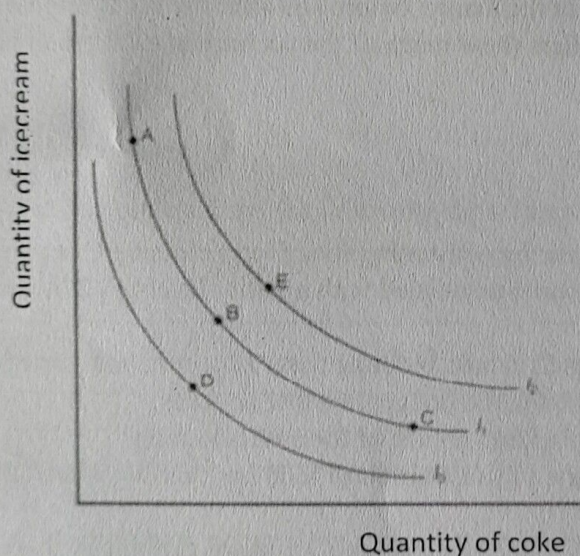
Time duration=1.5 hours

Total marks:30

Microeconomics (15 marks)

Very short questions (3*1= 3 marks)

1. If demand is price inelastic, then
 - a. buyers do not respond much to a change in price
 - b. buyers respond substantially to a change in price, but the response is very slow
 - c. buyers do not respond much to advertising, fads, or general changes in tastes
 - d. the demand curve is very flat
2. From the below diagram, if a person chooses bundle C, then he/she is likely to



- a. Gain more satisfaction more from bundle C than bundle A
 - b. Receive higher total utility at point C than at point B
 - c. Receive higher marginal utility from coke than from ice cream
 - d. Receive higher marginal utility from ice cream than from coke
3. Suppose John is consuming two goods, food and clothing. If his income doubles and the price of food and clothing increases by twice the original price, this will cause
 - a. John's budget line to shift out from the origin since Joe's income has increased

- b. the slope of John's budget line to get steeper if clothing is measured along the x-axis, since clothing has gotten relatively more expensive
- c. the slope of John's budget line to get flatter if food is measured along the x-axis, since the price of food went up by a smaller dollar amount than the price of clothing
- d. no change in ~~John's~~ ^{John's} budget line from its initial position

Short Questions (2*3=6 marks)

4. Suppose a company produces and sells smartphones. The company notices that when they increase the price of their smartphones by 10%, the quantity demanded decreases by 15%. Calculate the price elasticity of demand for these smartphones and determine whether the demand is elastic, inelastic, or unitary elastic. Also, calculate the revenue effect (change in total revenue) when the company increases the price by 10%. Show your calculations.

5. Consider the market for watches. The demand and supply equations for watches are as follows:

Demand: $Q_D = 800 - 4P$

Supply: $Q_S = 200 + 2P$

where Q_D is the quantity demanded, Q_S is the quantity supplied, and P is the price in dollars.

Now, the government imposes a tax of \$20 per watch on both buyers and sellers. Calculate the equilibrium price and quantity in the market before and after the tax is imposed. Also, determine the tax incidence on buyers and sellers (how much of the tax burden each group bears). Show your calculations

Long Question (1*6=6 marks)

6. The utility that Steve receives by consuming food F and clothing C is given by: $u(F, C) = FC$.
 - a. Draw the indifference curve associated with a utility level of 12. Is the indifference curve convex?
 - b. Suppose that food costs \$1 a unit, clothing costs \$3 a unit, and Steve has \$12 to spend on food and clothing. Graph the budget line that he faces.
 - c. What is the utility-maximizing choice of food and clothing?
 - d. What is the marginal rate of substitution of food for clothing when utility is maximized?
 - e. Suppose that Jane buys 3 units of food and 3 units of clothing with her \$12 budget. Would her marginal rate of substitution of food for clothing be greater or less than $1/3$?

Macroeconomics (15 marks)

Very Short Questions (3*1=3 marks)

7. Consider the circular flows in a four-sector model (i.e. including rest of the world). Which of the following represents the *injections* in the model?

- a. Imports
- b. Wages and interests
- c. Exports
- d. Both A and C

8. Which of the following shows a relationship between a stock and a flow?

- a. Financial Wealth and Net Investment
- b. Government Debt and Net Investment
- c. Capital and Current Account
- d. Financial Wealth and Savings

9. Which of the following is not a macroeconomic issue?

- a. Preventing business cycles
- b. Managing international economic issues.
- c. Profit/loss management of a firm
- d. Managing Fiscal deficit

Short Questions (2*3=6 marks)

10. Compute the NDP at Factor cost from the following data. (amount in crores)

Gross domestic fixed investment	15000
Inventory investment	3000
Depreciation	1500
Indirect taxes	700
Subsidies	2500
Private consumption expenditure	11000
Govt. Consumption Expenditure	15000
Net exports	2000

11. Consider the following data

NDP at Factor Cost	12,500
Net Factor Income Earned Abroad	5,000
NNP at Factor Cost	17,500
Undistributed profits	2500
Corporate tax	1500
Interest received by households	2000
Interest paid by households	1200
Transfer income	1300
Personal tax	1000

What is the personal income (PI) from the above data?

Long Question (06 marks = 03 + 03 marks)

12. a. Calculate the nominal GDP (GDP_{mp}) of country A for the year 2000 from the following information (1) Wages and salaries paid to workers: \$800 billion, (2) Rental income: \$100 billion, (3) Corporate profits: \$400 billion, (4) Interest income: \$50 billion, (5) Business taxes: \$120 billion, (6) Depreciation: \$70 billion.

b. Further, the GDP deflator of the economy for the year 2000 is 90. Find the real GDP of the country A for the year 2000.