ECON 205 Principles of Macroeconomics

Midterm 1 Mock Exam A (Timed)

Time limit: 75 minutes
Total points: 100
Allowed: basic calculator only

Coverage: Lectures 01-07

Section I: Multiple Choice (24 points; 2 each)

1. If consumer income rises for a normal good, the demand curve will: A. Shift left
   B. Shift right
   C. Move up along demand
   D. Move down along supply

2. A binding price floor causes: A. Shortage
   B. Surplus
   C. No effect
   D. Lower equilibrium price

3. Which is an example of investment in GDP? A. Buying shares of Apple stock
   B. Buying a used house
   C. A firm buying new machinery
   D. A household buying groceries

4. GDP via spending approach equals: A. C + I + G + T
   B. C + I + G + NX
   C. C + S + T + NX
   D. Wages + profits

5. If nominal GDP grows faster than real GDP, then: A. Output must be falling
   B. Price level likely rose
   C. Imports exceeded exports
   D. Unemployment must be zero

6. The unemployment rate equals: A. Unemployed / population
   B. Unemployed / employed
   C. Unemployed / labor force
   D. Labor force / population

7. Natural unemployment mainly includes: A. Cyclical only
   B. Frictional and structural
   C. Seasonal only
   D. Frictional and cyclical

8. Higher real interest rates tend to: A. Increase current consumption
   B. Decrease current saving
   C. Decrease investment
   D. Increase imports and exports equally

9. If NX is negative, the country has a: A. Trade surplus
   B. Trade deficit
   C. Balanced trade
   D. Capital surplus by definition

10. GDP deflator is: A. Real GDP / nominal GDP
    B. Nominal GDP / real GDP times 100
    C. CPI minus PPI
    D. Growth rate of real GDP

11. In Y = A*K^0.5*L^0.5, doubling both K and L causes output to: A. Double
    B. Rise by less than double
    C. Rise by more than double
    D. Stay fixed

12. Which best describes cyclical unemployment? A. Job loss from seasonal weather patterns
    B. Job search by new graduates
    C. Job loss during recession
    D. Job mismatch from obsolete skills only

Section II: Graphing and Market Analysis (20 points)

13) Urban Rental Market (10 points)

Initial equilibrium: rent P* = 1800, quantity Q* = 40,000 units.
City imposes ceiling Pc = 1500. At Pc: QD = 49,000 and QS = 31,000.

Tasks: 1. Draw and label demand, supply, initial equilibrium, and ceiling. (4) 2. Is policy binding? (1) 3. Compute shortage. (2) 4. Give two likely non-price outcomes. (2) 5. If a housing-construction subsidy shifts supply right, what happens to shortage? (1)

14) Two-Shock Coffee Market (10 points)

Shock 1: Drought raises coffee bean costs.
Shock 2: Popular health study increases demand for coffee.

Tasks: 1. Draw both shifts on one graph. (4) 2. Effect on equilibrium price. (2) 3. Effect on equilibrium quantity (and why). (3) 4. Brief ceteris paribus note. (1)

Section III: Quantitative Problems (40 points)

15) National Accounts and Deflator (16 points)

Economy produces only tablets and gym memberships.

Year	Tablet Price	Tablet Qty	Gym Price	Gym Qty
2025	500	120	50	900
2026	550	132	55	960

Tasks: 1. Compute nominal GDP in 2025 and 2026. (4) 2. Using 2025 as base year, compute real GDP in 2025 and 2026. (4) 3. Compute real GDP growth (2025->2026). (4) 4. Compute GDP deflator in both years and inflation via deflator. (4)

16) Labor Market Metrics (12 points)

Adult population = 200 million
Employed = 124 million
Unemployed = 10 million

Tasks: 1. Compute labor force. (2) 2. Compute unemployment rate. (3) 3. Compute LFPR. (3) 4. Compute employment-population ratio. (2) 5. If 2 million unemployed stop searching, recompute unemployment rate. (2)

17) Saving-Investment and Interest Channels (12 points)

Given: Y = 6200, C = 4100, T = 1100, G = 1300, I = 850

Tasks: 1. Compute private saving, public saving, national saving. (6) 2. Compute NX implied by S = I + NX. (2) 3. State whether the economy runs trade deficit/surplus. (2) 4. In one sentence each, explain effect of higher real interest rate on (i) consumption, (ii) investment. (2)

Section IV: Short Concept Responses (16 points)

18) Elasticity + Revenue (8 points)

A firm raises price by 8% and sees quantity demanded fall by 12%.

Tasks: 1. Approximate demand elasticity. (3) 2. Classify demand as elastic/inelastic. (2) 3. Predict total revenue direction and explain briefly. (3)

19) Production and Growth (8 points)

Suppose output is Y = AK^0.5L^0.5.

Tasks: 1. If K doubles with A and L fixed, by what factor does Y change? (3) 2. What does that imply about marginal returns to capital? (2) 3. Give one policy that can raise A in the long run and explain the channel. (3)