

# ECON 205 Midterm 1 Mock Exam A - Key

## Section I: Multiple Choice

1. B

2. B

3. C

4. B

5. B

6. C

7. B

8. C

9. B

10. B

11. A

12. C

## Section I Intuition Coach

- Most MC errors come from **mechanism confusion**: ask what variable is exogenous and what variable adjusts.
- For supply/demand items, first classify as **movement along** (own price changed) versus **curve shift** (any non-price driver changed).
- For labor items, memorize denominators: unemployment always uses **labor force**, not population.
- For macro identities, treat equations as accounting truths, not theories: they must balance by construction.

## Section II: Graphing and Market Analysis

### 13) Urban Rental Market

1. Correct graph: downward D, upward S, equilibrium at (1800, 40k), horizontal ceiling at 1500.
2. Binding ( $1500 < 1800$ ).
3. Shortage =  $QD - QS = 49,000 - 31,000 = 18,000$  units.
4. Any two: waitlists, quality decline, side payments/black markets, stronger screening/rationing.
5. Supply right shift reduces shortage (may not fully eliminate it).

### 14) Two-Shock Coffee Market

1. Supply shifts left (cost shock), demand shifts right (preference shock).

2. Price rises unambiguously.
3. Quantity ambiguous because demand-right raises Q while supply-left lowers Q.
4. Ceteris paribus: analyze each shift separately, then combine.

### **Section III: Quantitative Problems**

#### **15) National Accounts and Deflator**

Data: - 2025: Tablet 500x120, Gym 50x900 - 2026: Tablet 550x132, Gym 55x960

1. Nominal GDP
  - 2025:  $500 \times 120 + 50 \times 900 = 60,000 + 45,000 = 105,000$
  - 2026:  $550 \times 132 + 55 \times 960 = 72,600 + 52,800 = 125,400$
2. Real GDP (base 2025 prices)
  - Real 2025 = 105,000
  - Real 2026 =  $500 \times 132 + 50 \times 960 = 66,000 + 48,000 = 114,000$
3. Real growth
  - $(114,000 - 105,000) / 105,000 = 0.0857 = 8.57\%$
4. Deflator and inflation
  - Deflator 2025 =  $(105,000 / 105,000) * 100 = 100.00$
  - Deflator 2026 =  $(125,400 / 114,000) * 100 = 110.00$
  - Inflation =  $(110.00 - 100.00) / 100.00 = 10.00\%$

#### **16) Labor Market Metrics**

Given adults 200, employed 124, unemployed 10 (millions).

1. LF = E + U =  $124 + 10 = 134$  million
2. Unemployment rate =  $10 / 134 = 7.46\%$
3. LFPR =  $134 / 200 = 67.00\%$
4. EPOP =  $124 / 200 = 62.00\%$
5. If 2 million unemployed stop searching:
  - New U = 8, new LF = 132
  - New unemployment rate =  $8 / 132 = 6.06\%$

#### **17) Saving-Investment and Interest Channels**

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

1. Savings:
  - Private Sp =  $Y - C - T = 6200 - 4100 - 1100 = 1000$
  - Public Sg =  $T - G = 1100 - 1300 = -200$
  - National S =  $Sp + Sg = 800$
2. NX from S = I + NX:
  - $NX = S - I = 800 - 850 = -50$
3. NX negative means trade deficit.

4. Higher real interest rate:

- Consumption: tends to fall (higher cost of consuming today)
- Investment: tends to fall (higher cost of borrowing)

## Section IV: Short Concept Responses

### 18) Elasticity + Revenue

1. Elasticity approx =  $-12\% / 8\% = -1.5$
2. Elastic (absolute value > 1)
3. Revenue falls: quantity falls proportionally more than price rises.

### 19) Production and Growth

For  $Y = AK^{0.5}L^{0.5}$ : 1. If K doubles (A, L fixed), Y multiplies by  $\sqrt{2}$  approx 1.41. 2. Output rises less than proportionally with K  $\rightarrow$  diminishing marginal returns to K. 3. Valid policy examples: R&D tax credits, public research funding, stronger education/human capital pipeline; channel is higher innovation/diffusion raising A.

### Intuition Debrief (How to Think Fast Under Time Pressure)

- **Price controls:** if policy pushes price away from market-clearing price, quantity must be rationed by queues, quality, search, or side payments.
- **Elasticity and revenue:** revenue moves with the side (price or quantity) that adjusts more in percentage terms.
- **Real vs nominal:** nominal mixes prices and quantities; real isolates quantity; deflator is the bridge between them.
- **Saving and NX:** if national saving is below investment, foreign saving fills the gap and NX is negative.
- **Production functions:** changing one input with others fixed tests marginal returns; scaling all inputs tests returns to scale.