Name _____ SMU ID_____

ECO 3302, Spring 2025 – Early-Progress Exam
Intermediate Macroeconomics

February 24, 2025

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Allowed utensils: Pen, paper, eraser, and non-graphic calculator.

General Instructions:

- You have 50 minutes to complete the exam.
- The exam consists of 20 multiple choice questions (each worth 3.5 points) and 6 short-answer questions (each worth 5 points).
- There is only one (1!) valid answer per multiple choice question (MCQ). No points will be subtracted for wrong answers.
- Answer all MCQ questions in the sheet provided below.
- If you make a mistake when answering a MCQ and want to change your answer, please cross the 4 options (A, B, C, D) and clearly write on the right of box D the letter associated with your final answer.
- Be short and to the point in the short-answer questions. Correct answers typically don't require more than 5–6 lines of text.
- Do not remove the staple from your exam.
- Make sure to submit all pages of your exam.

Good luck!

MCQ Answer Sheet

Name _____ SMU ID_____

How to answer:

Questions:

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2. Ⓐ Ⓑ Ⓒ Ⓓ
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20. Ⓐ Ⓑ Ⓒ Ⓓ

Multiple Choice Questions (MCQ): 70 points

1. Select the correct answer:

   (a) Macroeconomics studies economic aggregates and their distributional aspects.

   (b) Modern macroeconomics uses empirical, theoretical and quantitative analysis, often seeking to inform public policy.

   (c) All the above are correct.

   (d) Only (a) is correct.

2. Which of the following transactions is not included in GDP calculations:

   (a) Second-hand goods.

   (b) Goods produced and sold in the country purchased by foreigners.

   (c) Neither (a) nor (b).

   (d) None of the above.

3. Why do statistical agencies worldwide compute real GDP today using chain weights rather than constant prices?

   (a) To solve the weighting problems associated with current prices.

   (b) To solve the weighting problems associated with base prices.

   (c) All of the above.

   (d) None of the above.

4. Since 1995, the BEA has produced chain-weighted measures of real GDP. With chain-weighted measures, the base year changes:

   (a) Continuously over time.

   (b) Every 3 years.

   (c) Every 5 years.

   (d) Periodically.

5. Suppose that consumers purchase ice cream and bicycles. In 2023, 1 scoop of ice cream cost \$5, a bicycle cost \$100, and the typical consumer bought 4 scoops of ice cream and 2 bicycles. In 2024, 1 gallon of ice cream cost \$6, a bicycle cost \$120, and the typical consumer bought 3 scoops of ice cream and 3 bicycles. Using 2023 as the base year, what was the inflation rate between 2023 and 2024?

   (a) 10%.

   (b) 50%.

   (c) 25%.

   (d) 20%.

6. A stock broker charges a 1 percent fee to purchase stock for clients. If a household uses the broker to buy 100 shares of a stock at \$50/share, then the transaction contributes _____ spending to GDP.

   (a) \$5,000 of investment.

   (b) \$50 of investment.

   (c) \$50 of consumption.

   (d) \$4,950 of investment.

7. Why is the core inflation rate often considered a better indicator of ongoing inflation trends?

   (a) Because it excludes volatile food and energy prices.

   (b) Because it adjusts the consumer price index (CPI) for substitution bias.

   (c) Because it incorporates new goods introduced into the CPI.

   (d) Because it accounts for changes in consumer spending habits.

8. Tim has a full-time job and a part-time job. If Tim quits the part-time job, the household survey will show _____ in employment, and the establishment survey will show _____ in employment.

   (a) A decrease; no change.

   (b) No change; a decrease.

   (c) A decrease; a decrease.

   (d) No change; no change.

9. What group of individuals is MOST likely to be negatively affected if the consumer price index (CPI) is adjusted to reduce the overstatement of price increases?

   (a) Homeowners with fixed-rate mortgages.

   (b) Savers holding money in regular savings accounts.

   (c) Someone who lent out money to a friend.

   (d) Government employees.

10. The percentage change in labor productivity (Y/L) is approximately the percentage change in output _____ the percentage change in hours worked.

    (a) Divided by.

    (b) Times

    (c) Plus.

    (d) Minus.

11. Which of the following provides a better depiction of the US economy today?

    (a) Consumption accounts for about 50% GDP, investment for 30%, government spending for 20%.

    (b) Consumption accounts for about 60% GDP, investment for 10%, government spending for 30%.

    (c) Consumption accounts for about 70% GDP, investment for 18%, government spending for 18%.

    (d) Consumption accounts for about 40% GDP, investment for 30%, government spending for 30%.

12. What is the difference between GDP and GNP?

    (a) GDP doesn't subtract depreciation, but GNP does.

    (b) GDP considers domestic income of the nation's residents, and GNP considers total income.

    (c) GDP and GNP are the same up to some statistical discrepancies.

    (d) GNP is GDP net of taxes.

13. What is the difference between the CPI and the GDP deflator?

    (a) The GDP deflator looks at all domestic good prices, but the CPI generally does not.

    (b) The GDP deflator factors in domestic goods only, while the CPI includes imported goods.

    (c) All of the above.

    (d) The GDP deflator uses fixed weights, while the CPI uses changing weights.

14. The effects of globalization on the domestic labor market are similar to those of skill-biased technological change because:

    (a) The US predominantly exports goods produced by unskilled labor and imports goods produced by skilled labor.

    (b) The US predominantly exports goods produced by skilled labor and imports goods produced by unskilled labor.

    (c) With globalization, production overwhelmingly shifts to low-wage countries.

    (d) The pace of educational advancements tends to fall behind that of globalization.

15. What is the difference between gross-output vs. value-added production functions?

    (a) Gross-output production functions relate materials to output; value-added ones do not.

    (b) Value added production functions are macro production functions, and gross-output are micro ones.

    (c) All of the above.

    (d) None of the above.

16. A production function satisfies Inada conditions if

    (a) All inputs are essential.

    (b) The first unit of each input is extremely valuable.

    (c) An additional unit of input is worthless when that input is extremely abundant.

    (d) All of the above.

17. If the elasticity of substitution between capital and labor is one, then

    (a) Capital and labor can be perfectly substituted.

    (b) If the relative price of capital increases by 10%, the capital-labor ratio will decrease by 10%.

    (c) If the relative price of capital increases by 10%, the capital-labor ratio will adjust by 1%.

    (d) None of the above.

18. What of the following is true about factor shares?

    (a) Crucially depend on the returns to scale in production and the nature of competition in both input and output markets.

    (b) With perfect competition, the profit share is zero.

    (c) With constant returns to scale, the profit share is zero.

    (d) All of the above.

19. What of the following is true about the US labor share?

    (a) It has been roughly constant at around 70% in the past 50 years.

    (b) It has increased by 8 percentage points, until reaching 67% in 2023.

    (c) It has decreased by 8 percentage points, until reaching 59% in 2023.

    (d) None of the above.

20. Today, college-educated workers in the US earn much more than high-school graduates relative to 40 years ago. This fact has puzzled economists since the relative supply of college-educated workers have increased dramatically during this time. The CES production function, which implies equation

$$\underbrace{\Delta \ln\left(\frac{W_H}{W_L}\right)}_{\substack{\text{Change in the} \\ \text{skill premium since 1980}}} = \frac{\sigma - 1}{\sigma} \underbrace{\Delta \ln\left(\frac{A_H}{A_L}\right)}_{\substack{\text{Relative technological} \\ \text{change since 1980}}} - \frac{1}{\sigma} \underbrace{\Delta \ln\left(\frac{H}{L}\right)}_{\substack{\text{Change in relative supply} \\ \text{of skilled workers since 1980}}},$$

    helps us reconcile these two facts with:

    (a) Elasticity of substitution (ES) lower than 1 and faster growth in the technology of low-skill workers.

    (b) ES equal to 1.

    (c) ES greater than 1 and faster growth in the technology of low-skill workers.

    (d) ES greater than 1 and faster growth in the technology of high-skill workers.

Short–Answer Questions: 30 points

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1. **Economists use real GDP per capita in PPPs to make cross-country income comparisons at specific points in time. Why GDP? Why real? Why per capita? Why PPPs?**

2. **GDP is not a perfect measure. List three important drawbacks of this measure, and provide examples for each one of them.**

3. **There are at least three reasons why economists believe that the CPI overstates inflation. State and explain these reasons.**

4. **Consider the following equilibrium in the market for goods and services:**

$$\overline{S}_1 = (\overline{Y} - \overline{T} - \overline{C}) + (\overline{T} - \overline{G}) = I(r_1)$$

What happens if the government increases demand from $\overline{G}$ to $\overline{G} + \Delta G$, where $\Delta G > 0$, while keeping taxes fixed at $\overline{T}$? Graph both the initial- and the new equilibrium, and explain the transition to the new equilibrium. *Clearly state and indicate what object in your graph is.*

5. **Consider production function**

$$Y = F(K, L) = zK^{\alpha}L^{\beta}, \qquad \text{where } z > 0, \alpha > 1, \beta \in (0, 1).$$

Compute the marginal product for each factor. Are they positive or negative? Increasing or decreasing? Show your derivations. Is this production function neoclassical?.

6. **Consider a perfectly-competitive economy in which a profit-maximizing firm produces all output according to**

   $Y = F(K, L) = AK^{\alpha}L^{\beta}$, where $A > 0$ and $\alpha, \beta \in (0, 1)$ are such that $\alpha + \beta < 1$

   Compute the real wage and the real rental rate of capital using P, W, R to denote the price of output, labor, and capital, respectively. Show all steps of your derivations. What happens to the rental rates if technology A improves? And to the real rental rate of capital if part of the capital stock is destroyed? And to the real wage if there is a wave of immigration?