

checked by Yang Lu

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

ECON 3123 Final Exam (Answer Book)

Date: Dec 10, 2025

Time allowed: 120 minutes

34+2

Not to be taken away.

Instructions:

- Answer ALL the questions. Write your answers on the answer book. Anything written on the question book will NOT be graded.
- Write your answer to all the questions within the provided area. **Anything outside the provided area will NOT be graded.**
- Make sure that all your handwritings are legible. Anything that cannot be understood by the grader will not be graded.
- Please submit BOTH the question book and the answer book after the exam.

DO NOT OPEN UNTIL INSTRUCTED!

Name: CHEN, Wanja

Student ID: 21009956

Seat Number: 13

You MUST sign the following HKUST Honor Code.
Otherwise, your exam will NOT be graded.

The HKUST Academic Honor Code

Honesty and integrity are central to
the academic work of HKUST.

Students of the University must observe and uphold
the highest standards of
academic integrity and honesty in all the work
they do throughout their program of study.

◆
As members of the University community,
students have the responsibility to help maintain
the academic reputation of HKUST
in its academic endeavors.

◆
Sanctions will be imposed on students,
if they are found to have violated the regulations
governing academic integrity and honesty.

Your Signature: 

Multiple Choice Questions (20 points)

1	2	3	4	5
C	A	D	X B	C

1 ✓

Question 6 (15 points)

(1) (5 points)

In period t , the unemployment rate is at the natural rate with an inflation rate of 5%.

D

$$\pi_t = 5\% + 0.4\pi_{t-1} - 0.5u_t.$$

$$\pi_t - \pi_{t-1} = 0.$$

$$\pi_t = 5\% + 0.4\pi_{t-1} - 0.5u_t.$$

$$0.5u_t = 5\% - 0.6\pi_t.$$

$$u_t = \frac{5\%}{0.5} - \frac{0.6\pi_t}{0.5}$$

$$u = 0.1 - 1.2\pi_t.$$

Question 6 (15 points, Continued)

(2) (5 points)

Central bank keep same rate at period $t+1$ and $t+2$.

$$\pi_{t+1}^e = 2.4\% + 0.4\pi_t + \epsilon$$

$$\pi_t = X + 0.4\pi_{t+1} - 0.5U_{t+1}$$

⇒ Inflation should be 16%.

|

(3) (5 points)

government wants to achieve its inflation target 4%, in Period t means $\pi_{t+1} = 4\% + 0.4\pi_t + \epsilon$

$$\pi_{t+1}^e = 2.4\% + 0.4\pi_t + \epsilon$$

$$\pi_{t+1}^e = \pi_{t+1} = 4\% + 0.4\pi_t + \epsilon - XU_{t+1} = 2.4\% + 0.4\pi_t + \epsilon$$

$$4\% - XU_{t+1} = 2.4\%$$

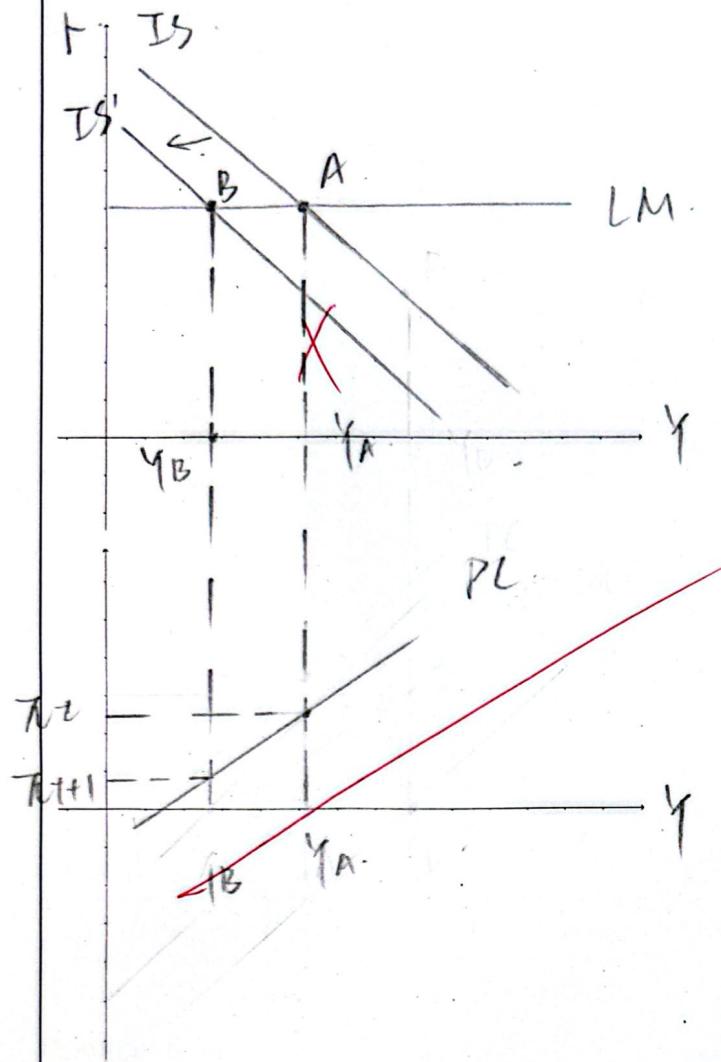
$$-XU_{t+1} = 2.4\% - 4\%$$

$$XU_{t+1} = 1.6\%$$

$$X = 0.016$$

Question 7 (35 points)

(1) (5 points) and (3) (10 points)



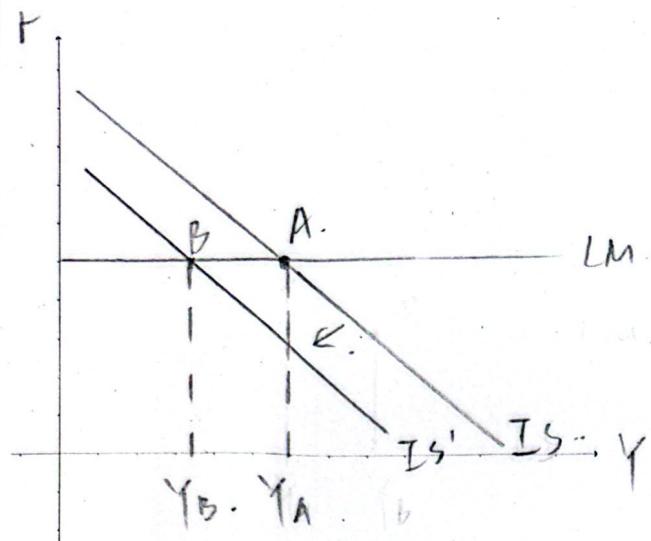
Effects:

AI shock \rightarrow Unemployment $\uparrow \rightarrow y \downarrow \rightarrow$ IS shift left!

$$y_A > y_B$$

Question 7 (35 points, Continued)

(2) (10 points)



Q

Effects:

AI shock \rightarrow unemployment $\uparrow \rightarrow Y \downarrow$ (C↓, I↓) $\rightarrow IS$ shift left
 $\rightarrow IS$ curve shift left.
 $\rightarrow Y_A > Y_B$.

(4) (10 points) Circle the correct one and write one-sentence explanation.

Inflation (increases / decreases / remains unchanged / is uncertain).

Explanation:

AI replace Humans workers. The efficiency increase. the quantity of goods increase. then the price of goods decrease. then Inflation decrease.

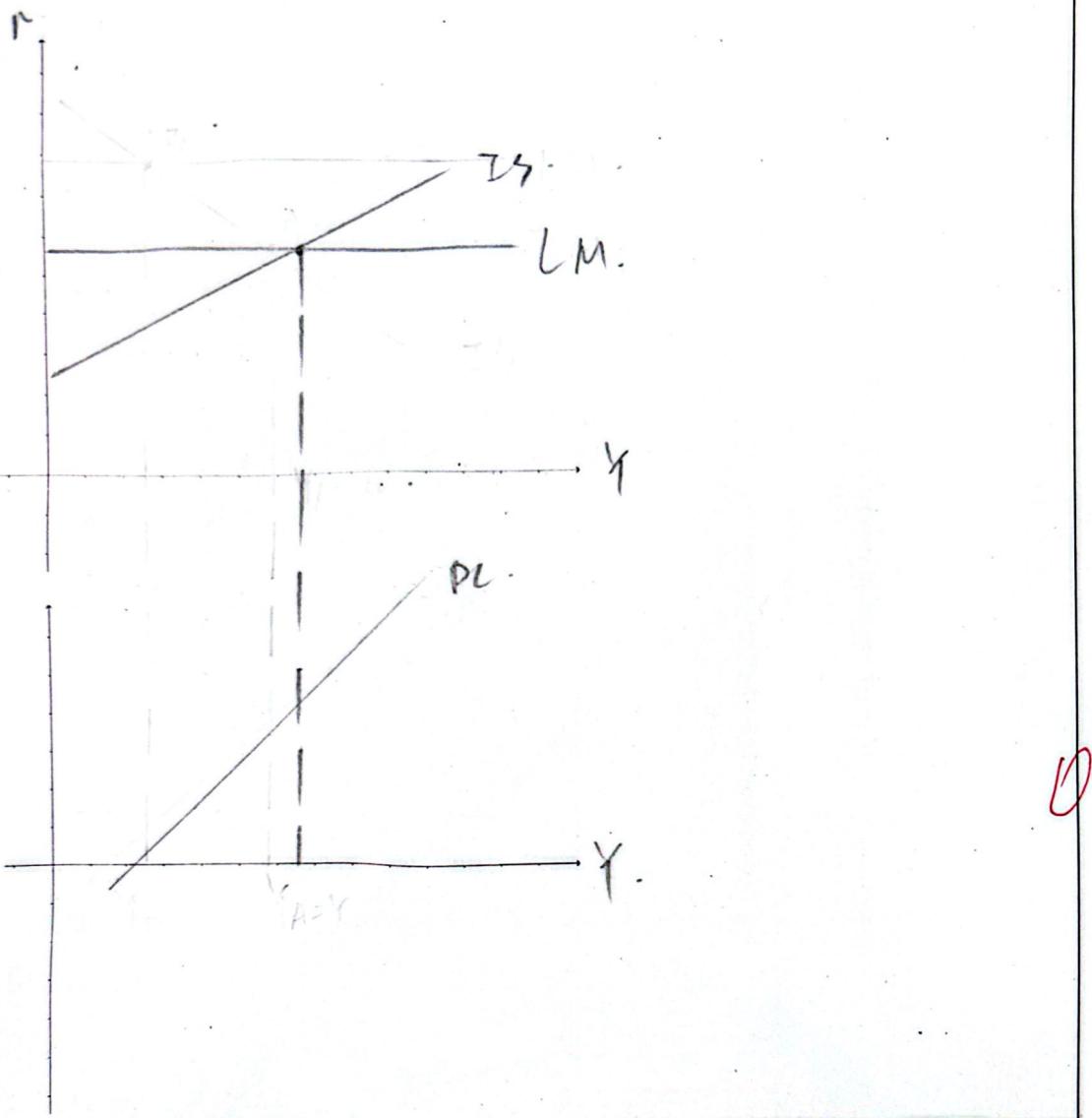
Output (increases / decreases / remains unchanged / is uncertain).

Explanation:

government cannot response. Then more and more AI replace the human workers. then unemployment increases. people's affordable money decrease, then consumption decrease, then output decreases.

Question 8 (30 points)

(1) (5 points) and (2) (10 points)

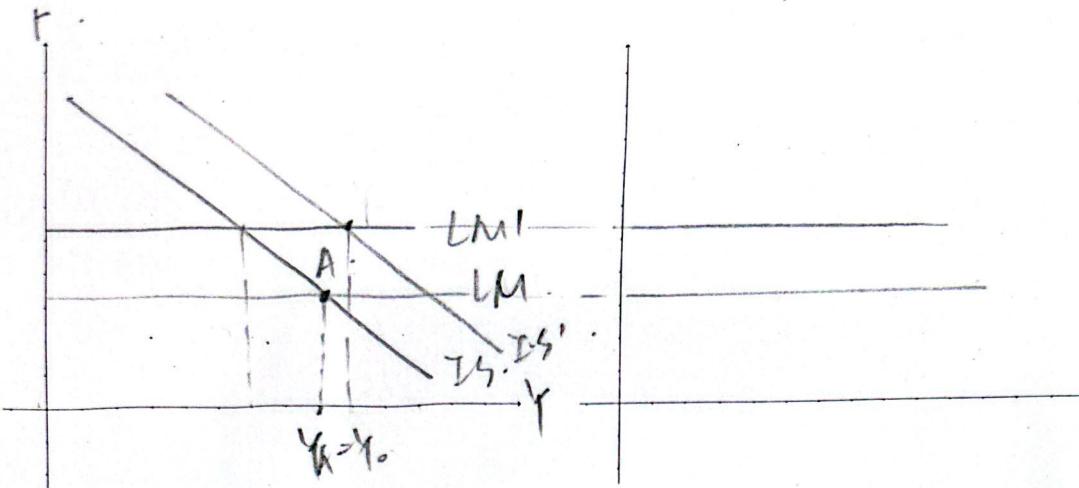


Policy mix: Interest rate

Explanation:

Question 8 (30 points, Continued)

(3) (15 points) Circle the correct one and write one-sentence explanation.



Monetary policy:

central bank increase the late

✓
D

Consumption (increases) / decreases / remains unchanged / is uncertain).

Explanation:

Investment (increases) / decreases / remains unchanged / is uncertain).

Explanation:

Net export (increases) / decreases / remains unchanged / is uncertain).

Explanation:

***** END OF THE EXAM *****