Econ 450 Hanes Fall 2024 Second midterm grade distribution

A	129-97
B	98-67
C	66-49
D	47-43
F	30

ANSWERS

SUNY-Binghamton
Fall 2024

Name ______________________

Economics 450
Monetary Economics
Second midterm exam

No calculators. Total points on exam: 134. Good luck! Look over the entire exam before you begin. If I ask you to explain your answer, your grade for the question will depend on your *explanation*.

1) 10 pts. What is "commodity money"? Note that I am asking for a *definition*, not an *example* of commodity money.

VIII) c) 3) a)

2) At the bottom of this page is a list of words and phrases. Each of the sentences below can be completed with one of the words or phrases. A word or phrase may be the answer to more than one sentence. Not all of the words and phrases are answers to a sentence. 2 pts each. From VII) & IX)

a) In a legal procedure called bankruptcy, a borrower's assets are seized and liquidated and the proceeds are used to pay the borrower's debts as much as possible.

b) A financial intermediary that collects information about a potential borrower to judge the probability that the potential borrower would default on a loan is using screening.

c) In order for a liquidity crisis to occur, a financial intermediary must be borrowing short-term to finance purchases of assets, and an *additional* condition must also hold. The additional condition is first come, first served.

d) When one party to a transaction has information that the other party lacks, that is called asymm. inf.

e) By holding secondary reserves, a financial intermediary can guard against the risk of a liquidity crisis, but it may still remain subject to interest-rate risk.

f) In order to protect itself against a borrower's incentive to do high-risk, high-return things with borrowed money, a lender will lend only to a potential borrower with positive net worth.

g) A financial intermediary can prevent a borrower from carrying out a business project in a high-risk way by using monitoring and restrictive covenants.

Screening	*Lender of last resort*
First come, first served	
Monitoring	*Net worth*
Secondary reserves	*Collateral*
Moral hazard	*Restrictive covenants*
Liquidity	*Bankruptcy*
Reserves	*Asymmetric information*
Bond rating	*Interest-rate risk*

3) 10 pts. In the context of financial regulation, what is "resolution authority"?

IX) G) 4) f)

4) A financial intermediary (FI) has been borrowing overnight, from just two lenders, to fund purchases of relatively liquid bonds. Each lender has been lending $\$D$ to the FI. Every morning, each lender has to decide whether to roll over her loan to the FI, or to withdraw her loan.

a) 10 pts. Suppose that, if both lenders to the FI choose to roll over, the FI remains in business and will repay both lenders with interest: each lender will receive $(1+i)D$. If either or both of the lenders withdraws, the FI must immediately sell its bonds at low prices. In that case, each lender receives a fraction z of the money that is owed her, where z is less than one. That is to say, if one withdraws and the other doesn't, the lender who withdraws gets zD; the lender who rolls over gets $z(1+i)D$. If both withdraw, each gets zD. In each of the four segments of the box, list what is received by "lender A" and "lender B." Circle the segment(s) of the box that is (are) an equilibrium.

		A	
		Roll over	Withraw
B	Roll over	$(1+i)D$ / $(1+i)D$	zD / $z(1+i)D$
	Withdraw	$z(1+i)D$ / zD	zD / zD

b) 10 pts. Now suppose that the lenders to the FI have insurance policies that will pay off their loans to the FI should the FI default on the loans. Thus, if both lenders roll over, each lender will receive $(1+i)D$. If one withdraws and the other doesn't, the lender who withdraws gets D; the lender who rolls over gets $(1+i)D$. If both withdraw, each gets D. In each of the four segments of the box, list what is received by "lender A" and "lender B." Circle the segment(s) of the box that is (are) an equilibrium.

		A	
		Roll over	Withdraw
B	Roll over	$(1+i)D$ / $(1+i)D$	D / $(1+i)D$
	Withdraw	$(1+i)D$ / D	D / D

5) A bank has taken $10m in deposits and borrowed $2m by issuing bills. It holds $2m in cash and $6m worth of long-term Treasury bonds. It has made $8m in loans to local businesses.

a) 5 pts. What is the bank's capital? $ 2+6+8-10-2=4

b) 5 pts How much does the bank have in "secondary reserves"? $ 6

6) 10 pts. What is a "credit default swap"?.

XII) c) 3) ii)

7) 10 pts. Suppose that Chemung Canal Bank made a big profit in the year 1845, back before there were regulatory capital requirements or deposit insurance. Some of the owners of the bank wanted to pay it all out to the owners in dividends. Other owners wanted to use the profit to buy more bonds and make more loans to be held by the bank, increasing the bank's capital. What would have been the possible benefit to the owners of increasing the bank's capital?

IX) F) 3) a)

8) Consider an economy with no banks. A person faces a situation similar to, but not exactly the same as that described by the Baumol-Tobin model. As in that model,

Y is annual real income received at the beginning of the year

i is the annual return to holding bonds, paid at the end of the year.

N is the number of financial transactions the person engages in.

$M/P = \frac{Y}{2N}$ is the average money balance if the person engages in N financial transactions.

F is the time-and-trouble cost of one financial transaction.

In this economy, however, *money pays interest* at an annual interest rate $\hat{i}$. $\hat{i}$ is less than i.

a) 10 pts. Derive an equation that shows the average real money balance a person will hold. SHOW ALL STEPS.

Start with

$$Z = i\,\tfrac{1}{2}Y - i\frac{Y}{2N} + \hat{i}\frac{Y}{2N} - FN$$

or

$$TC = i\frac{Y}{2N} - \hat{i}\frac{Y}{2N} + FN$$

Correct answer $\left(\frac{M}{P}\right)^D = \sqrt{\frac{YF}{2(i-\hat{i})}}$

8) continued.

b) 10 pts. Suppose everyone in the economy is exactly like the person in a). What happens to the interest rate in the economy if there is *no* change in the money supply or the price level, but there *is* an increase in $\hat{i}$ (the rate of interest paid on money)? Make sure your answer is consistent with your answer to a), and **draw a graph to illustrate your answer.**

Answer must be correct taking your answer to a) as given.

c) 10 pts. Let X denote the supply of real money balance per person, that is $X = (M / P)^S$. Starting from your answer to a), derive an equation that gives the equilibrium value of i in this economy (alone on the left-hand side of the equation) as a function of X, Y, F and $\hat{i}$ (all on the right-hand side of the equation). SHOW ALL STEPS.

X = your answer to a)

Solve for i.

9) 10 pts. What is a "nonrecourse loan"?

XII) c) 5) c) i) & Glossary

10) 10 pts. What are *two* things that government agencies and regulators do to revive a country's financial intermediaries after a financial crisis?

XI) E) 3) b) c)