Question 3

6 points (1 + 2 + 1 + 1+1)

(a) 1 point:
- One point is earned for calculating the correct required reserve ratio of 0.2.

(b) 2 points:
- One point is earned for stating that the excess reserves will increase by $5,000.
- One point is earned for stating that the change in demand deposits is zero.

(c) 1 point:
- One point is earned for calculating the increase in the money supply:
  5 × $5,000 = $25,000.

(d) 1 point:
- One point is earned for stating that the price of bonds will increase because the purchase of bonds increases the money supply, which decreases the interest rate.

(e) 1 point:
- One point is earned for stating that the cash deposit will not immediately change the money supply.

Write in the box the number of the question you are answering on this page as it is designated in the exam. 3

3A

~~(a) required reserves~~

(a) $rr = \frac{\text{required reserves}}{\text{deposits}}$

$= \frac{\$2000}{\$10000}$

$= \boxed{0.2}$

(b) (i) excess reserves increase by \$5000.

(ii) Demand deposits remain unchanged immediately after the purchase.

(c) $\$5000 \times \frac{1}{rr}$

$\$5000 \times \frac{1}{0.2}$

$\$5000 \times 5$

$\boxed{\$25{,}000}$

(d) The price of bonds increases. When bonds are purchased by the Federal Reserve, the money supply increases, decreasing nominal interest rates. If interest rates decrease, the price of the bond must increase so that the return from the bond stays constant.

(e) M1 does not change immediately because the money was part of M1 as both cash and a checking deposit. Since both forms are part of M1, the M1 measure of the money supply experienced no immediate change.

3

Write in the box the number of the question you are answering on this page as it is designated in the exam. 3B 1 of 2

a) Based on Sewall Bank's balance sheet, the required reserve ratio is 20%.

b) i. Excess reserves will increase by $4000

ii. Demand deposits will increase by $5000

c) Δspending $\times \frac{1}{RR} = \Delta$Money Supply

$4000 \times \frac{1}{.20}$

$4000 \times 5 = \$20,000$

The money supply can increase by a maximum of $20,000 as a result of the $5000 purchase of bonds by the Federal Reserve.

d) when the Federal Reserve purchases bonds, the price of bonds on the open market increases. This occurs because the purchase of bonds lowers the nominal interest rate due to the subsequent increase in the money supply which follows the purchase. when nominal interest rates are lower, bond prices increase because ~~the price of the bond is deduced by dividing the nominal interest rate~~ bond prices and the interest

Write in the box the number of the question you are answering on this page as it is designated in the exam.

3

3B 2 of 2

rate are inversely related.

e) If an individual deposits $5000 in cash into her checking account, there is no immediate effect on the M, measure of the money supply.

#3

Write in the box the number of the question you are answering on this page as it is designated in the exam. 3C

3. a) total reserves = 20,000 the required reserve
RR = 2000 ratio for Sewell bank is
20%10.

b) (i) Excess reserves will increase by $1000
(ii) the demand deposit will increase by $ 5000

c) $ER \times \frac{1}{RR} = \Delta MS$ There will be a maximum
$4000 \times \frac{1}{.2}$ increase of $ 20,000
$4000 \times 5 = 20{,}000$ in the money supply

d) when the fed purchases bonds, the price of bonds in the open market increases due to the increased demand for bonds by the government.

e) There is no effect of the deposit because it was already counted as M2, the composition of the money supply changes, not the quantity.

Question 3

Overview

This question established students' proficiency with balance sheets, the money multiplier, and the bond market.

Sample: 3A
Score: 6

The student answers all parts of the question correctly and so earned all 6 points.

Sample: 3B
Score: 4

The student earned 1 point in part (a) for calculating the required reserve ratio. One point was earned in part (c) for correctly calculating the maximum increase in the money supply, based on the student's incorrect assertion that excess reserves would increase by $4,000. A point was earned in part (d) for stating that the price of bonds would increase because the Federal Reserve's bond purchase would lower interest rates and "bond prices and the interest rate are inversely related." The student earned 1 point in part (e) for stating that the cash deposit would have "no immediate effect on … the money supply."

Sample: 3C
Score: 2

The student earned 1 point in part (d) for stating that when the Federal Reserve purchases bonds, the price "increases due to the increased demand for bonds." One point was earned in part (e) for concluding that the cash deposit would have "no effect" on the M1 measure of the money supply.