ECON 311 - Intermediate Macroeconomics (Professor Gordon)
First Midterm Examination: Fall 2014
Answer sheet

YOUR NAME: _____

Student ID: _____

Circle the **TA session** you attend:

	Chris - 3PM	Andreas - 3PM	Hugh - 3PM
	Chris - 4PM	Andreas - 4PM	Hugh - 4PM

INSTRUCTIONS:

1. The exam lasts **1 hour**.
2. The exam is worth 60 points in total: 30 points for the multiple choice questions (Part A) and 30 points for the four analytical problems (Part B).
3. **Write your answers for part A (the multiple choice section) in the blanks below.** You won't get credit for circled answers in the multiple choice section.
4. **Place all of your answers for part B in the space provided**.
5. You must show your work for part B questions. There is no need to explain your answers for the multiple choice questions.
6. **You must turn in both the answers and the multiple-choice questions. DO NOT PULL THEM APART.**

Good luck!

PART A: Multiple Choice Problems
Answer multiple choice questions in the space provided below.
USE CAPITAL LETTERS.

1	A	6	B	11	C	16	B	21	D	26	B
2	A	7	B	12	C	17	B	22	D	27	B
3	D	8	C	13	D	18	B	23	D	28	C
4	B	9	C	14	C	19	C	24	B	29	E
5	A	10	C	15	C	20	C	25	C	30	C

PART B: Analytic Problems

QUESTION 1 (4 points)

The following tabel summarizes GDP and the GDP growth rate for two countries A and B in 2013:

	GDP	GDP growth rate (annual)
Country A	3000	1%
Country B	2000	1.5%

If both countries continue to grow at the same rate, which country will first reach a GDP level of at least 6000? Show your work!

To reach a level of 6000, country A has to double it's GDP while country B has to triple the GDP.
Doubling time country A: ln 2 / 0.01 = 69.3 years
Tripling time country B: ln 3 / 0.015 = 73.2 yearss
-> Country A

QUESTION 2 (4 points)

Nominal GDP of Fantasia was 1200 in 2013. Real GDP in 2013 using 2010 as base year was 1000. Using the GDP Deflator, what was the average annual inflation rate between 2010 and 2013?

GDP Deflator in 2013: 1200/1000 = 1.2
Groth rate between 2010 and 2013: ln(1.2/1) = 0.182 = 18.2%
Annualized growth rate = 18.2%/3 = 6.07%

QUESTION 3 (8 points)

Suppose an economy that only produces chairs and tables. The following table lists prices and production for the years 2012 and 2013.

	2012	2013
Prices		
Chairs	4	5
Tables	12	6
Quantities		
Chairs	10	8
Tables	2	5

a) What was nominal GDP for the years 2012 and 2013? *(2 points)*

	2012	**2013**
Nominal GDP	4*10+12*2 = 64	5*8+6*5 = 70

b) Calculate two indices for real GDP in 2013 if 2012 is normalized to 1 - one based on 2012 prices, one based on 2013 prices. Mark your results clearly. *(4 points)*

Index for 2013 using 2012 prices	2013 in 2012 prices: 4*8+12*5 = 92 Index = 92/64 = 1.438
index for 2013 using 2013 prices	2012 in 2013 prices: 5*10+6*2 = 62 Index = 70/62 = 1.129

c) Using (b), calculate the chain-weight index of real GDP in 2013 (if 2012 is normalized to 1). *(1 point)*

Chain-weight index of real GDP in 2013	sqrt(1.438*1.129) = 1.274

d) Using 2012 as the base year, calculate real GDP in 2013. *(1 point)*

Chain weighted real GDP in 2013 (2012 as base year)	64*1.274 = 81.5

QUESTION 4 (14 points)

Consider an economy described by the following equations:

$C = 80 - 1*r + 0.8*(Y - T)$

$I_p = 80 - 4*r$

$T = 30 + 0.25*Y$

$G = 49$,

$NX = 135 - 0.10*Y$

$(M/P)^d = 0.3*Y - 6*r$

$M^s/P = 120$

a) Using the above numbers: write on three separate lines the equation showing the relationship of autonomous planned spending to the interest rate; the value of the multiplier; and the equation for the IS curve with all the specific numbers plugged in. *(3 points)*

Autonomous planned spending	$Ap = Ca - c*Ta + Ip + G + NXa = 320 - 5*r$
The value of the multiplier	$k = 1/((1-c)*(1-t)+t+nx) = 2$
IS curve	The IS curve : $Y = k*Ap = 640 - 10*r$

b) Derive the **LM curve**, using the ingredients listed above. *(2 points)*

$Md/P = Ms/P$

$0.3*Y - 6*r = 120$ or $Y = 400 + 20*r$

c) Find the equilibrium values of **income** and **interest rate**. (Hint: if you found equations for income above, then calculate the interest rate by combining the IS and LM curves separately; if you found equations for the interest rate above, then calculate the level of income using the IS and LM curves separately.) *(2 points)*

640 – 10*r = 400 + 20*r
30*r = 240 --> r = 240/30=8
Y = 400+20*6 = 560.

d) The government decides to increase government spending to **G=79**. What are the new levels of **GDP** and the **interest rate**? What is **investment**? (Note: G=79 is the new level of government spening, not the increment) (3 points)

The change to G=79 increases Ap to Ap = 350 – 5*r, which changes the IS equation to
Y = 2*(350 – 5*r)=700-10*r
The LM curve equation stays the same Y = 400 + 20*r
So the new values of (Y,r) are
Y = 600, r = 10

Investment is
I = 80 - 4*r = 40

e) The increase in government spending described in (d) caused a change in GDP. The central bank wants to get GDP back to its previous value by changing the money supply. What should the new **real money supply** be? (Hint: Calculate the interest rate first, then find the money supply using r) *(4 points)*

Y=560, but also Y = 700-10*r
-> r = 14
(Ms/P) = (Md/P) = 0.3*Y – 6*r = 84

PART A: Multiple Choice Problems

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Macroeconomics focuses on a certain set of variables called
      A) aggregates.
      B) balances.
      C) marginals.
      D) partials.
      E) micros.

2) The *output gap* is zero when
      A) Actual real GDP = Natural real GDP.
      B) Actual real GDP < Natural real GDP.
      C) Actual real GDP > Natural real GDP.
      D) Natural real GDP = 0.

3) In an economy where actual real GDP is always equal to the natural real GDP, inflation
      A) fluctuates around an average of zero percent.
      B) settles down to zero percent.
      C) is at the same rate as GDP growth.
      D) is constant at a rate that can be low or high.

4) If the government of Country Z is running a budget deficit and net exports are zero, then
      A) investment is greater than saving.
      B) saving is greater than investment.
      C) investment and saving are equal.
      D) none of the above.

5) The U.S. business cycle record, in common with most, has
      A) expansions lasting longer than recessions.
      B) troughs lasting longer than peaks.
      C) recessions lasting longer than expansions.
      D) peaks lasting longer than troughs.

6) The proper short-run goal of macroeconomic policymakers is to
      A) amplify the business cycle.
      B) dampen the business cycle.
      C) maintain low economic growth.
      D) promote high economic growth.

7) The real income per capita is a measure of the
      A) total well-being of the nation.
      B) well-being of the average individual in the nation.
      C) well-being of every individual in the nation.
      D) well-being of the average employed person in the nation.

8) From the last five recessions, the mildest two were
      A) 1975 and 2001 recessions.
      B) 1975 and 2008-09 recessions.
      C) 1990-91 and 2001 recessions.
   D) 1981-82 and 2008-09 recessions.

9) Which of the following is NOT an injection?

        A) Kansas farmers sell 1 million bushels of wheat to Russia

        B) The state of Illinois builds a new courthouse.

        C) The Smithsonian Institute purchases Chris Evert Lloyd's tennis racket.

        D) An accountant purchases a new personal computer for use in his office.

10) An intermediate good is

        A) always counted when measuring GDP because it doesn't represent time spent in production of a final good or service.

        B) a good that is sold to the government and then redistributed to the poor.

        C) any good that is resold by its purchaser rather than used as is.

        D) a good whose value is of neither a high grade nor a low grade.

11) A crucial national income accounting identity has (S + T) equal to

        A) I + G + F.

        B) I + NX.

        C) I + G + NX.

        D) G + F.

        E) I + G - NX.

12) The leakage and injections approach implies that deficit spending by the government must be financed by

        A) the trade deficit must always offset the government deficit.

        B) private saving less private investment plus net exports.

        C) private investment less private savings plus net exports.

        D) B and C.

13) Which of the following is a possible reason for the improved economic performance between 1985 and 2007?

        A) Monetary and fiscal policy have become more effective.

        B) Demand Shocks have become smaller and less important.

        C) Change in conditions that make monetary and/or fiscal policy more powerful.

        D) All of the above

14) If total planned spending (E(p)) exceeds GDP, we expect that

        A) government expenditures must be rising.

        B) inventories will be rising.

        C) inventories will be falling.

        D) GDP will be falling.

Figure 3-3
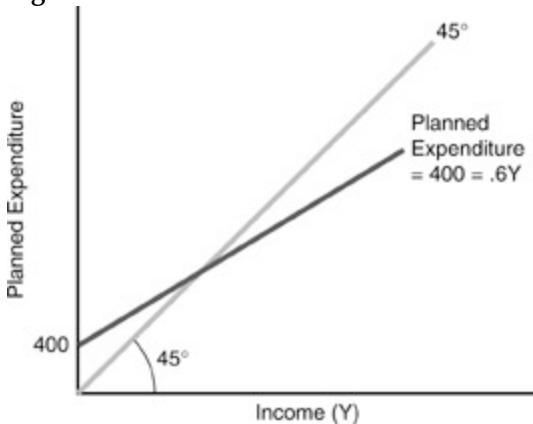
15) In Figure 3-3 above, autonomous planned spending is
    A) 0.8Y.
    B) 400 + 0.6Y.
    C) 400.
    D) 400 - 0.6Y.
    E) 0.

16) Which of the following defines the multiplier for a change in autonomous taxes?
    A) 1/s
    B) -c/s
    C) 1/c
    D) -s/c

17) Automatic stabilization refers to
    A) the policy of lowering tax rates during a recession.
    B) the effect of income taxes in lowering the multiplier effect of changes in autonomous planned spending.
    C) the policy of increasing autonomous G during a recession.
    D) all of the above.

18) The IS curve plots for each level of income the _____ that causes income to equal _____.
    A) planned autonomous spending, planned expenditures
    B) interest rate, planned expenditures
    C) interest rate, planned autonomous spending
    D) planned autonomous spending, planned autonomous spending

19) An increase in real GDP causes the demand for real money balances to
    A) remain unaffected.
    B) rise, fall, or remain unaffected depending on the interest rate at the time.
    C) rise.
    D) fall.

20) Suppose the demand for money becomes less sensitive to changes in the interest rate. In moving along an LM curve, an increase in income must be accompanied by a _____ change in the interest rate than before, meaning that the LM curve has become _____.
    A) greater, flatter
    B) smaller, steeper
    C) greater, steeper
    D) smaller, flatter

21) Which of the following statements would be true for an economy that can be characterized as being to the right of its LM curve?
    A) There will be a tendency for the interest rate to decrease.
    B) There will be a tendency for the level of output to increase.
    C) There is excess supply of money.
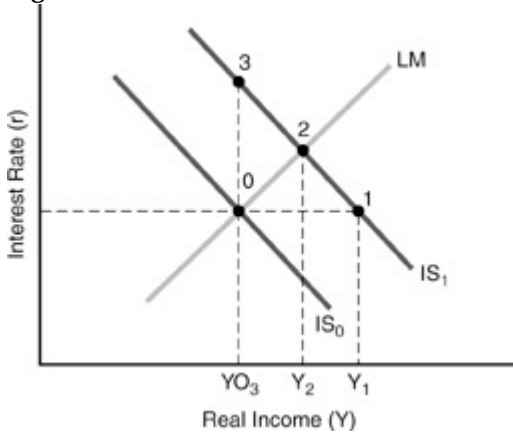   D) There is excess demand for money.

Figure 4-5
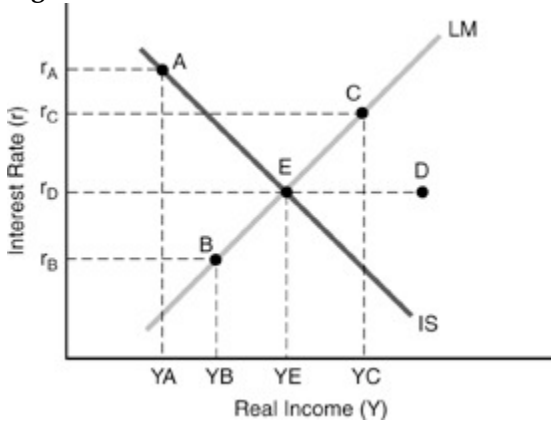
22) In Figure 4-5, the commodity market is in equilibrium
  A) at points A, B, E, and C.
  B) at points E and D.
  C) at points B, C, and E.
  D) at points A and E.
  E) only at point E.

Figure 4-6

23) In Figure 4-6 above, with IS_0 shifting to IS_1 against the upward-sloping LM curve, crowding-out is the result that
  A) income rises to Y_1 instead of staying at YO_3.
  B) income stays at YO_3.
  C) income rises to Y_1 instead of to Y_2.
  D) income rises to Y_2 instead of to Y_1.

24) Monetary policy will have a large income effect provided the
  A) IS curve is steep.
  B) IS curve is flat.
  C) LM curve is flat.
  D) LM curve is steep.

25) As of October 2014 how many quarters has the Federal Funds rate been at the Zero Lower Bound?
  A) 15
  B) 19
  C) 23
  D) 27

26) Which of the following is NOT a component of the broad unemployment rate illustrated in Chapter 2?
  A) involuntary part-time
  B) workers who quit rather than experience layoffs
  C) workers laid off
  D) marginally attached workers

27) Examples of hyperinflation given in the book / given in class refer to which countries
  A) Mozambique / Germany
  B) Germany / Zimbabwe
  C) Zimbabwe / Germany
  D) Germany / Mozambique

28) The in-class comparison of the US and Europe illustrated that since 1995
  A) European productivity has grown faster than in the US
  B) European per-capita income has grown faster than in the US
  C) European productivity has grown slower than in the US
  D) European per capita income has grown slower than in the US
  E) A) and D)
  F) B) and C)

29) Between 2010 and 2014 the ratio of _____ to personal disposable income _____
  A) assets; rose
  B) assets; fell
  C) liabilities; rose
  D) liabilities; fell
  E) A) and D)
  F) B) and C)

30) The decline in the employment-to-population ratio since 2007 has created how many millions of missing jobs?
  A) 1
  B) 5
  C) 10
  D) 15