Introduction to Macroeconomics · M5 · 9 April 2015 · **Exam time: 60 minutes**

DNI Number ____________________ 1st Surname ____________________ Name ____________________

1. [2%] What is the relationship between the concepts of aggregate production and real GDP?

2. [2%] Define briefly the meaning of the *post hoc ergo propter hoc* fallacy and suggest an example.

3. [2%] Why is El Farol bar problem relevant for macroeconomic analysis?

4. [3%] Is it possible for the GDP deflator inflation rate to be positive and, simultaneously, for the CPI inflation rate to be negative? Justify the answer.

5. [3%] Can real GDP be larger than nominal GDP? Whathever the case, explain why or how.

6. [3%] Explain the meaning of the expression "contractionary open market operation".

7. [2%] Indicate two variables having to do with the Fisher effect and another two completely unrelated to the Fisher effect.

8. [2%] Identify two members of the European Union that are not eurozone members and two eurozone members that do not belong to the European Union.

9. [2%] Has the European Central Bank ever set a negative (nominal) interest rate? If so, indicate which one.

10. [6%] Assuming that the relationship between the economy's interest rate *i* and the price of T-bills holds, find the discount factor if the price of T-bills (when issued) is 750 and the face value of a T-bill is 1,000.

11. [8%] The money multiplier is 2, the monetary base is 1,000, and deposits amount to 1,500. If possible, find the reserve ratio; if not possible, explain why.

12. [8%] Explain whether a central bank can simultaneously control the interest rate i and the money stock M1.

13. [2%] List three functions of a central bank.

14. [8%] The (exact) real interest rate between t and $t+1$ is 10%. According to the CPI, the purchasing power in t of €1,000 is 5 baskets of goods. The CPI in $t+1$ is 300. Find, if possible, the CPI inflation rate between t and $t+1$ and the nominal interest rate between t and $t+1$.

15. [5%] Real GDP has increased by 5% while the CPI inflation rate has decreased by 3%. By how much has nominal GDP varied approximately?

16. [14%] Indicate how the following events are likely to modify the market functions ("→" = shift to the right, "←" = shift to the left) and the equilibrium interest rate ("↑" = goes up, "↓" = goes down, "=" = unaltered, "?" = ambiguous or uncertain change).

	supply of liquidity function	demand for liquidity function	equilibrium interest rate
The central bank conducts an expansionary open market operation			
Households reduce the amount of financial assets bought			
The government issues T-bills to pay previously issued T-bills that mature			
Banks no longer want to lent to firms and, to finance their activities, firms sell financial assets that they have previously bought			
The central bank reduces the legal reserves ratio			
Banks expect an immediate rise in the inflation rate but firms and the public in general ignore the rise			
Firms and households suddenly refuse to buy financial assets anymore			

17. [9%] Suggests events (not listed in 16) causing the shifts of the functions indicated below and specificy the effect on the equilibrium interest rate (if the effect is not ambiguous).

Events	supply of liquidity function	demand for liquidity function	equilibrium interest rate
	=	←	
	←	→	
	→	→	

18. [5%] Government purchases equal imports. Exports equal savings. Taxes equal investment. If possible, find, using the savings macroeconomic identity, the value of transfers.

19. [20%] (i) Analyze graphically the effect on the equilibrium interest rate of the simultaneous occurence of the following two events: (a) people massively decide to purchase houses; and (b) bankers believe that a contraction of the general economic activity is coming and, for this reason, consider that lending for home purchase turns out to be much more risky (they expect a rise in the default rate). (ii) Suggest a monetary policy measure by the central bank that could neutralize the change in the interest rate found in (i).

20. [7%] Pick one of the following three events and explain how the money multiplier process is likely to be affected by the event selected: (i) the bankruptcy of half of the banking system of an economy; (ii) firms and households decide to borrow from banks only 50% of what banks offer to lend; (iii) people double their liquidity ratio (from 0.2 to 0.4) and, at the same time, the reserve ratio is reduced from 0.4 to 0.3.