※ 考生請注意：本試題不可使用計算機。　　請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Consider how unemployment would affect the Solow growth model. Suppose that output is produced according the production function $Y = K^\alpha[(1-u)L]^{1-\alpha}$, where K is capital, L is the labor force, and u is the unemployment rate. The national saving rate is "s", the labor force grows at rate "n", and capital depreciates at rate "δ". (20%)

   1a) What is the per worker production function? How does it depend on the unemployment rate? (5%)

   1b) Calculate the steady-state level of capital per worker. How does an increase in the unemployment rate affect this value? (10%)

   1c) Illustrate graphically the effects on the steady-state value of capital per worker of a positive unemployment rate as opposed to zero unemployment. (5%)

2. Please explain the following terms (10%)

   2a) Balanced Budget Multiplier

   2b) Quantity theory of Money

3. If Petroleum exporting countries decide to increase the prices of petroleum, please use AS-AD model to analyze the short run impact and long-run equilibrium on the economy. Can you stabilize the economy to keep prices constant [What kind of policy (fiscal or monetary policy) would you use]? (20%)

4. Assume Mary has the utility function u(A,B)=3A+5B, where A and B are the numbers of apples and bananas, respectively. Suppose her income is 500 and the prices of apple and banana are p and q, respectively. Find her optimal consumption bundle(s). (15%)

5. There are only two consumers in a market and their demand curves are p=10-q and p=16-2q respectively, where p is the price and q is the quantity of the good. Assume the market supply curve is p=6+q. Find the total demand curve and equilibrium price and quantity. (15%)

6. Assume John has the utility function u(A,B)=AB, where A and B are the numbers of apples and bananas, respectively. Explain your answers of the following problems. (20%)

   6a) Does John's preference satisfy the property of "more is better"? (5%)

   6b) Does John view apple and banana as perfect complements? (5%)

   6c) Assume the price of apple decreases. Are the substitution and income effects positive? (10%)

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