注意：（1）Part I 有 20 題單選題，依照題號順序，將答案寫在<u>答案卷第一頁選擇題作答區</u>
<u>對應題號空格內</u>（第 1～20 格）。<u>每格答對得 3 分，答錯或未作答 0 分。</u>

（2）<u>答題不要求任何計算過程，只依答案格內的答案對錯給分。</u>

**Part I：單選題（每題 3 分，共 60 分）**

1. Over the past year, output grew 6%, capital grew 8%, and labor grew 3%. If the labor income accounted for 60% of the national income, how much did productivity grow?
   【A】0%　　　　【B】1%　　　　【C】2%　　　　【D】5%　　　　【E】-5%

2. The aggregate production function for an economy is $Y = 2.5K^{0.5}N^{0.5}$. The economy has a competitive labor market with supply of labor $N^s = 25w^2$, where $w$ is the real wage rate. Suppose capital stock is 16, $K = 16$, and labor force equals 125, the labor market equilibrium implies the real wage is _____ and the rate of voluntary unemployment equals _____.
   【A】1; 80%　　【B】1.1; 75.8%　　【C】1.5; 55%　　【D】2; 20%　　【E】2.2; 3.2%

3. Follow Q2. Now suppose that the government levies a labor income tax rate of $\tau = 20\%$. What effect does NOT the labor income tax have?
   【A】Labor supply curve shifts to $N^s = 25[(1-\tau)w]^2$.
   【B】Employment reduces to $N = 20$.
   【C】Unemployment rate increases to 84%.
   【D】Real wage decreases to 0.89.
   【E】Output decreases to below 45.

4. According to Quantity Theory of Money, if money is growing 5% per year, real *GDP* is growing 2% per year, and velocity of circulation of money is constant, then inflation rate is _____; moreover, if the real interest rate is 4%, by Fisher equation, the nominal interest rate is _____.
   【A】5%; 9%　　【B】5%; 1%　　【C】3%; 7%　　【D】3%; 1%　　【E】7%; 11%

5. A bond-financed increase in government expenditure will cause
   【A】real *GDP* and the interest rate to rise in both Classical and Keynesian models.
   【B】real *GDP* and the interest rate to rise in Classical model only.
   【C】real *GDP* and the interest rate to rise in Keynesian model only.
   【D】real *GDP* to rise only in Keynesian model and the interest rate to rise only in Classical model.
   【E】real *GDP* to rise only in Classical model and the interest rate to rise only in Keynesian model.

6. An expansionary fiscal policy in Keynesian *IS-LM* model usually has a crowding out effect <u>unless</u>
   【A】 price is flexible instead of rigid.
   【B】 investment is very sensitive to the interest rate.
   【C】 money demand has a transaction motive.
   【D】 marginal propensity to consume is close to one.
   【E】 money market exhibits a liquidity trap.

7. An economy has the Phillips curve: $\pi_t = \pi_t^e - 2(u_t - 0.06)$. Let the expected inflation rate at $t = 1$ equal zero ($\pi_1^e = 0$) and the unemployment rate be targeted at $u_1 = 4\%$. Assume that people have adaptive expectations about inflation: $\pi_{t+1}^e - \pi_t^e = \beta(\pi_t - \pi_t^e)$, and the adjustment parameter $\beta$ equals 0.5. What will be the inflation rate at $t = 2$ if government intends to set the unemployment rate at $u_2 = 4\%$?
   【A】 2%　　　【B】 3%　　　【C】 4%　　　【D】 5%　　　【E】 6%

8. According to the new classical theory, an unanticipated increase in money supply will
   【A】 increase both the price level and employment, but decrease the real wage.
   【B】 increase the price level, but leave employment and the real wage unchanged.
   【C】 increase the price level, employment, and the real wage.
   【D】 increase the price level, but decrease employment and the real wage.
   【E】 decrease the price level, but increase employment and the real wage.

9. Suppose an economy is initially in a steady state with capital per worker below the Golden Rule level. To reach the Golden Rule level of capital per worker, it should _____ the saving rate. In the transition to the new steady state, consumption per worker will
   【A】 increase; always exceed the initial level.
   【B】 increase; first fall below then rise above the initial level.
   【C】 decrease; always exceed the initial level.
   【D】 decrease; first fall below then rise above the initial level.
   【E】 decrease; first rise above then fall below the initial level.

10. An expansionary monetary policy by the central bank includes which of the following?
    【A】 Lowering of the reserve requirement
    【B】 Lowering of the discount rate
    【C】 The purchase of securities in the open market
    【D】 All of A, B, and C
    【E】 None of A, B, and C
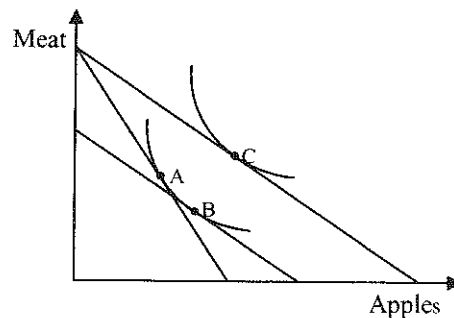
11. The above figure shows a decrease in the price of apples. Which of the following is true?

【A】The substitution effect is the movement from A to B and the income effect is the movement from B to C.

【B】The substitution effect is the movement from C to B and the income effect is the movement from B to A.

【C】The substitution effect is the movement from A to C and the income effect is the movement from C to B.

【D】The substitution effect is the movement from B to C and the income effect is the movement from C to A.

【E】The substitution effect is the movement from C to A and the income effect is the movement from A to B.

12. Which of the following is most likely to be a variable cost?

【A】Property taxes.

【B】Interest on outstanding bonds.

【C】Insurance premiums.

【D】Wage payments.

【E】Payments to employees with long-term contracts.

13. Let $MC$ = marginal cost, $MP$ = marginal product, $w$ = wage, $TC$ = total cost, and $VC$ = variable cost. Using this notation, $MC$ =

【A】$w \times MP$.　　【B】$(TC + VC)/w$.　　【C】$MP/w$.　　【D】$w/MP$.　　【E】$1/MP$.

14. Connie has $\$X$, and the interest rate is $r$. Her two-period budget constraint is the line connecting ____ in future consumption and ____ in current consumption.

【A】$\$X$ ; $\$X$

【B】$\$X(1+r)$ ; $\$X$

【C】$\$X$ ; $\$X(1+r)$

【D】$\$X/(1+r)$ ; $\$X$

【E】$\$X$ , $\$X/(1+r)$

15. Suppose you are to inherit $\$10,000$ a year from now and have just sold your rights to that inheritance for $\$9,700$, and that you would have accepted no less than $\$9,389$ in exchange for those rights. What is the current interest rate?

【A】2.8%　　【B】2.9%　　【C】3.0%　　【D】3.1%　　【E】3.2%

16. Which of the following production functions exhibit constant returns to scale? In each case $y$ is output and $K$ and $L$ are inputs. (1) $y = K^{1/2}L^{1/3}$　(2) $y = 3K^{1/2}L^{1/2}$　(3) $y = K^{1/2} + L^{1/2}$　(4) $y = 2K + 3L$.

【A】1, 2 and 4　　【B】2, 3 and 4　　【C】1, 2 and 3　　【D】3 and 4　　【E】2 and 4

17. If there are negative externalities associated with the production of a good and the government imposes a policy that forces producers to pay these cots, the equilibrium price
    【A】 will rise and the equilibrium quantity will fall.
    【B】 will fall and the equilibrium quantity will increase.
    【C】 and the quantity will both fall.
    【D】 and the quantity will both increase.
    【E】 will rise but the change in quantity will be indeterminate.

18. If both firms behave as leader firms, then
    【A】 Cournot equilibrium results.
    【B】 Stackelberg equilibrium results.
    【C】 Stackelberg disequilbrium results.
    【D】 Bertrand equilibrium results.
    【E】 Cournot and Bertrand equilibrium results.

In answering the questions, consider the following game where two shops are deciding about whether to charge a high or low price. The outcomes are represented as (McDonald, KFC).

KFC

|  |  | Low price | High price |
|---|---|---|---|
| McDonald | Low price | (200, 200) | (500, 100) |
|  | High price | (100, 500) | (300, 300) |

19. Refer to the example above, the equilibrium of this game, if played only once, is that
    【A】 only McDonald charges a low price.
    【B】 both firms charge a low price.
    【C】 only KFC charges a low price.
    【D】 both firms charge a high price.
    【E】 none of the above answers are correct.

20. Refer to the example above, if this game is repeated over an infinite or uncertain horizon, the most likely observed behavior will be that
    【A】 only McDonald charges a low price.
    【B】 both firms charge a low price.
    【C】 only KFC charges a low price.
    【D】 both firms charge a high price.
    【E】 none of the above answers are correct.

注意：（1）Part II 有 8 格填空題，依照格號順序，將答案寫在答案卷第一頁選擇題作答區
　　　　下方的橫線作答區內。每一列填一格答案，依序先寫格號，再寫答案。每格答對
　　　　得 5 分，答錯或未作答 0 分。
　　（2）計算題不要求任何計算過程，只依每一列對應格號的答案對錯給分。
　　（3）請保持答案卷第一頁的整齊乾淨，非答案的計算過程請勿列入。

**Part II：填空題（每格 5 分，共 40 分）**

1. Consider an economy with the consumption function: $C = 200 + 0.75Y_D$, where $Y_D$ is disposable income. The investment function is $I = 200 - 25r$. Government purchases and taxes are both 100. The money demand function is $M^d/P = Y - 100r$. The money supply $M$ is 1,000 and the price level $P$ is 2. Suppose that the government plans to issue consumer vouchers（消費券）to add to the autonomous consumption to raise equilibrium real *GDP* to $Y = 1,200$. How much consumer vouchers need to be issued?　**Answer:** 　(21)　.

2. Country A and country B both have the production function: $Y = F(K,L) = K^{1/2}L^{1/2}$. Assume that neither country experiences population growth nor technological progress and that 5 percent of capital depreciates each year. Assume further that country A saves 10 percent of output each year and country B saves 20 percent of output each year. Denote the steady-state level of capital per worker for country A and B to be $k_A^*$ and $k_B^*$, respectively. What is the ratio of $k_B^*$ over $k_A^*$, $k_B^*/k_A^*$?　**Answer:** 　(22)　.

3. Among the following Taiwan business indicators, which is (are) leading indicator(s)?　**Answer:** 　(23)　.
（以代號填答，多寫扣分，扣至本題零分為止）
   a. Index of export orders　　b. Industrial production index　　c. Monetary aggregates M1B
   d. Unemployment rate　　e. Stock price index　　　　f. Building permits
   g. SEMI book-to-bill ratio　　　h. Index of producer's shipment for manufacturing
   i. Nonagricultural employment　　j. Inventories to sales ratio for manufacturing

4. An expectations-augmented aggregate supply curve is given by $Y = 500 - 100\left(P^e/P\right)^2$ and an aggregate demand curve is given by $Y = M/2P$. Here, $P$ and $P^e$ are actual and expected price level, respectively. Initially, the money supply is $M = 800$. Suppose the monetary authority announces that it will increase $M$ from 800 to 1600 and then enacts the policy. What are the new equilibrium values of *P* and *Y*?　**Answer:** 　(24)　.（寫下 $P = \_\_\_$ ；$Y = \_\_\_$ 。必須指出答案是 $P$ 還是 $Y$，若未區分，不計分；答對一個，得部分分數）

5. A perfectly competitive firm has a cost function given by $STC(q) = q^2 + 8q + 1$. If there are 500 identical firms in this industry, what is the industry's supply curve?　**Answer:** ___(25)___ . If the market demand function is $Q^D = -50p + 1000$, what is the equilibrium level of output for an individual firm?　**Answer:** ___(26)___ .

6. Suppose Coca-Cola is a Stackelberg leader and Pepsi is the follower in a duopoly, and industry demand and cost conditions are $P = 60 - 2(q_{Coca} + q_{Pepsi})$; $MC_{Coca} = 10$ and $MC_{Pepsi} = 20$. What are the Stackelberg equilibrium quantities?　**Answer:** ___(27)___ .（請分別寫出 $q_{Coca} =$ ____ ；$q_{Pepsi} =$ ____ 。答對一個，得部分分數） What is the Stackelberg equilibrium price?　**Answer:** ___(28)___ .

*（試題結束！）*