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請務必在答題紙標明所答題號為(1),(2),…,(51)，並依此題號順序作答，只需提供答案即可，不需提供計算過程。

I. Microeconomics (50 points)

A. 填空題第(1),(2),…,(26)格，除括號內有特別註明分數者外，其餘每格 2 分，共計 50 分。

1. Suppose Canon Inc. decided to invest 45 billion yen in developing and launching a new model of its digital camera, expecting that it will bring additional sales of 60 billion yen. The company has already invested 38 billion yen when the marketing department suddenly finds out that the introduction of a similar camera by Sony will reduce Canon's expected additional sales to 30 billion yen. The company's management is trying to decide whether to continue investing in the new product or close the project. Canon hires you as an economic consultant. So, think like an economist to help the company's management make their decision:
   a) At this point in time, Canon's marginal cost of introducing the new product is _____(1)_____ billion yen.
   b) Canon's marginal benefit from introducing the new product is_____(2)_____ billion yen.
   c) Will you advise Canon to finish the project and introduce the new product? _____(3) (one point)_____.

2. Sarah and her boyfriend Mike want to save some money to pay for their wedding. So they decided to help people in the neighborhood by cleaning their garages and mowing lawns. Sarah takes 60 minutes to clean a garage and 80 minutes to mow a lawn. Mike takes 80 minutes to clean a garage and 80 minutes to mow a lawn. Sarah and Mike devote 10 hours per week each to these activities and get paid $25 for each garage they clean and $25 for each lawn they mow.
   a) Sarah's opportunity costs in cleaning garages is _____(4)_____ dollars.
   b) _____(5) (one point)_____ has a comparative advantage in cleaning garages.

3. The table below shows the demand and supply schedules for Gas in Dryland. A subsidy on gas of $10 per gallon is proposed and the government asks you to examine the effects of the subsidy.

Price (dollars per gallon)	Quantity demanded (millions of gallons per year)	Quantity supplied (millions of gallons per year)
10	320	0
20	240	0
30	160	80
40	80	160
50	0	240

   a) With the subsidy, the price that consumers pay is _____(6)_____, the price that sellers receive is _____(7)_____, and _____(8)_____ gallons of gas are sold.
   b) With the subsidy, the marginal social benefit from gas is _____(9)_____, and the marginal social cost of gas is _____(10)_____.
   c) And dead weight loss for the whole economy is _____(11)_____.

4. One year ago, Ms. Case and Mr. Bond opened a book store called C&B Bookstore. They invested $1,000,000 of their savings into the partnership to buy equipment and initial inventory. They rented a building for $90,000 a year, and hired two employees for an annual wage of $40,000 each. Case and Bond believed that the best alternative investment of their money would be government bonds, which could yield an annual return of 8 percent. To run the store, Case quit her previous job, at which she earned $100,000, but her former boss told her that she was welcome to return anytime. Bond kept his job with the government, but gave up 6 hours of leisure each week (for 50 weeks), the time he used to spend playing golf. Bond used to say: "I'd only give up my golf time if someone paid me $100 an hour." During the first year of operation, C&B paid $20,000 for utilities and the firm's total revenue was $350,000. The market value of C&B 's equipment was $200,000 at the beginning of the year and $170,000 at the end of the year.
   a) The explicit costs of C&B Bookstore is_____(12)_____, and implicit costs is _____(13)_____.
   b) The economic depreciation of their capital is _____(14)_____.
   c) The firm's economic profit in the first year of operation is _____(15)_____.

5. Anna's Farm produces and sells milk. The market for milk is perfectly competitive. The market price of milk is $2.50 per gallon. The relationship between the farm's output and total costs is shown in the table below. Use these given information to calculate Anna's average variable, average total, and marginal cost and try to draw those curves. After you done that, use those curves to answer the following questions:

Quantity (gallons per day)	Total cost (dollars per day)
0	400
100	703
200	880
300	1,008
400	1,160
500	1,410
600	1,840

   a) If Anna maximizes her profit, her output is _____(16)_____. Under that output, her profit/loss would be _____(17)_____.
   b) If the market price is equal to _____(18)_____, Anna will shut down her production.

6. Nimbus, Inc., and Clean, Inc. are the only producers of flying brooms. Each firm has two strategies: Spend 30,000 dollars a year on research and development (R&D) or spend nothing on R&D. If neither firm spends on R&D, Nimbus' economic profit is 80, 000 dollars and Clean's economic profit is 40,000 dollars. If each firm conducts R&D, market shares are maintained, but each firm's profit is lower by the amount spent on R&D. If Nimbus conducts R&D and Clean does not, Nimbus makes an economic profit of 120,000 dollars, while Clean incurs an economic loss of 20,000 dollars. If Clean Inc. con-ducts R&D and Nimbus does not, Cleans Inc. makes a profit of 60,000 dollars while Nimbus loses -10,000 dollars.
   a) In the Nash equilibrium, Nimbus, Inc., will get _____(19)_____ profit and Clean, Inc., will get _____(20)_____ profit.
7. The table below shows costs, private benefits of students, and social benefits arising from college education. There is no government involvement and the schools are competitive.

Enrollment (millions of students per year)	Marginal social cost (thousands of dollars per student per year)	Marginal private benefit (thousands of dollars per student per year)	Marginal external benefit (thousands of dollars per student per year)
4	4	16	8
8	6	14	7
12	8	12	6
16	10	10	5
20	12	8	4
24	14	6	3

   a) The market equilibrium enrollment is _____(21)_____ and the tuition is _____(22)_____.
   b) Considering social benefit of education to the whole society, the efficient level of enrollment is _____(23)_____. Hence, the deadweight loss of the competitive market is _____(24)_____.
   c) If the government provides the efficient amount of education, of the total tuition paid by a student, the government pay_____(25)_____ and a student pay_____(26)_____.

II. Macroeconomics (50 points):

B. 單選題第(27),(28),...,(46)格，每格 2 分，共計 40 分。

1. According to the light signals announced by Council for Economic Planning and Development (經建會) based on monitoring indicator for Taiwan economy, the light colors from November, 2011, to August, 2012, are all blue (incredibly 10-succession blues). Afterwards, the color has turned into yellow-blue for months (at least, till November) in the end of 2012, which meant that Taiwan economy, for that time, was_____(27)_____ *(a) Only just under recession; (b) Only just recovering from the recession; (c) About to fall into recession; (d) About to be overheated; (e) A little bit cool down from overheated.*
2. In addition to light signals, Council for Economic Planning and Development also regularly announces the composite indicators for Taiwan economy, including leading indicators, coincident indicators, and lagging indicators. As for the respective component series, which of the following items should be classified as a "lagging" indicator?_____(28)_____ *(a) Stock prices index; (b) Unemployment rate; (c) Industrial production index; (d) Electric power consumption; (e) Monetary aggregate (M1$_B$).*
3. After the serious impact of 2008 global financial crisis, the U.S. authorities conducted the well-known "Quantitative Easing Policy", which called QE1, QE2, and even QE3 (just announced in 13 September 2012). Essentially, these measures are nothing but expansionary monetary policies under the circumstances when_____(29)_____approaches the "zero lower bound". *(a) Federal funds rate; (b) Corporate bond rate; (c) Discount rate; (d) 10-year treasury bound rate; (e)Mortgage loan rate.*
4. By definition, the "internal balance" requires_____(30)_____ *(a) The balanced trade; (b) Zero unemployment rate; (c) The full employment output; (d) Zero inflation rate; (e) None of the above.*
5. Which of the following currency have the "largest" absolute value of currency nowadays?_____(31)_____ *(a) New Taiwan Dollar; (b) Singapore Dollar; (c) Hong Kong Dollar; (d)Thailand Baht; (e) Euro.*
6. If inflation is greater in Korea by 10% than it is in the rest of the world, then the purchasing power parity (PPP) theory predicts that the_____(32)_____ *(a) Korean won would appreciate; (b) Korean won would depreciate; (c) Korean won would remain stable; (d) U.S. dollar would weaken; (e) Korean products must have real appreciation.*
7. The so-called Okun's law is an empirically observed negative relationship between_____(33)_____ *(a) Inflation rate and interest rate; (b) GDP and net exports; (c) Inflation rate and exchange rate; (d) Unemployment rate and real output gap; (e) Unemployment rate and job vacancy rate.*
8. Which of the following account should be included in M1$_A$ by the definition of Taiwan's central bank?_____(34)_____ *(a) Demand saving deposit; (b) Foreign currency deposit; (c) Time deposit; (d) Currency held by the public; (e) Mutual fund.*
9. Which of the following situation may push the LM curve to the "left"?_____(35)_____. *(a) The invention of ATM or credit card; (b) Expansionary monetary policy taken by central bank; (c) An increase in the interest paid on checking account;(d) Tax cut; (e) An expectation of higher inflation rate in the future.*
10. The well-known "Marshall-Lerner condition" describe the trade elasticity criteria of getting improvement of_____(36)_____ through domestic currency devaluation. *(a) Only exports; (b) Only imports; (c) Entire trade balance; (d) Degree of inflation; (e) Government budget.*

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11. "European sovereign debt crisis" is one of the modern economic issues which caused widespread concern since 2009. Especially, sovereign debt ratings of several euro-zone countries have even been deeply downgraded by principal rating agencies (such as Moody's, S&P, Fitch) mainly owing to their___(37)___. *(a) High unemployment rate; (b) High inflation rate; (c) High Debt/GDP ratio; (d) Vast amount of sovereign debt; (e) Low economic growth rate.*

12. Given the average tax rate (t), domestic GDP (Y), and government expenditure (G). A general expression for the "budget surplus" is___(38)___. *(a) $tG - Y$; (b) $Y - tG$; (c) $tY - G$; (d) $G - tY$; (e) $G - Y$.*

13. Concretely speaking, the economic growth can be measured by the yearly growth rate of___(39)___. *(a) Trade balance; (b) Number of employed workers; (c) GDP ; (d) Domestic investment; (e) Population.*

14. Considering the balance of payment (BOP)（國際收支帳）, the exports or imports amount should be recorded into the___(40)___. *(a) Current account; (b) Capital account; (c) Financial Account ; (d) official reserve transactions account; (e) None of the above.*

15. Saudi Arabia sent petroleum to Taiwan in exchange of U.S. dollars. In Taiwan, this will lead to___(41)___. *(a) No change in the current account; (b) A merchandise trade deficit; (c) A balance of payments deficit; (d) A Financial account deficit; (e) None of the above.*

16. If the central bank finance the government deficit which is just resulted from the tax cut, all these measures together would lead to___(42)___. *(a) Right shift of both IS and LM curve ; (b) Right shift of only LM curve; (c) Right shift of only IS curve; (d) Right shift of LM curve but left shift of IS curve ; (e) Left shift of both IS and LM curve.*

17. The Hong Kong Monetary Authority (HKMA)（香港金融管理局）declared "linked exchange rate regime"（連繫匯率制）is adopted for the Hong Kong dollar/USD rates since 1983. Conceptually, "linked exchange rate" is most similar to the___(43)___ exchange rate regime. *(a) Pure floating ; (b) Fixed; (c) Managed floating; (d) Target zone; (e) Dual.*

18. Which of the following measure should be viewed as a contractive monetary policy of central bank (or Fed)?___(44)___. *(a) Provide more high powered money; (b) Set higher required reserved ratio; (c) Decrease the discount rate; (d) Announce lower federal fund rate target; (e) Perform the Quantitative Easing Policy.*

19. What is "labor force"（勞動力）of a certain country? It's defined as the number of___(45)___. *(a) People looking for work; (b) Jobless People; (c) The employed; (d) The sum of the employed and jobless people; (e) Whole population.*

20. The fluctuation of USD index（美元指數）is quite crucial to the commodities prices（原物料價格）, because most of the commodities are USD-denominated. Essentially, USD index is the___(46)___ of USD. *(a) Nominal exchange rate; (b) Real exchange rate; (c) Nominal effective exchange rate; (d) Real effective exchange rate; (e) Forward exchange rate.*

C. 填空題(47),(48),...,(51)，如有必要，答案請四捨五入至小數點以下第二位，或以分數型式表示，每格2分，共計10分。

Let's take a look at a small and simplified open economy model, where C, I, G, X, M represent the consumption, investment, government spending, exports and imports of that economy, respectively. Among these variables, assumed that investment, government spending and exports are all exogenous, namely $I = \bar{I}$, $G = \bar{G}$, and $X = \bar{X}$. Besides, consumption and import function can be expressed as followed (Y denotes the domestic income):

$$C = \bar{C} + cY, \quad M = \bar{M} + mY,$$

Where $\bar{C}$ and $\bar{M}$ denote the autonomous consumption and imports, while c and m represent the marginal propensity to consume and import. Moreover, following information is also given:

$$\bar{C} = \bar{I} = \bar{G} = 40, \quad \bar{X} = \bar{M} = 30, \quad c = 0.7, m = 0.2.$$

a) According to the above setting, the equilibrium income (Y) should be___(47)___, and the trade balance (TB=X-M) should be___(48)___.

b) Instead of exogenous design of exports and imports. This time, consider the influence of exchange rate on the trade balance. Let E represent the real exchange rate (1 unit of domestic product can be converted into E units of foreign products), hence the increase (decrease) in E implies the real appreciation (depreciation) of that economy. More concretely, exports and imports function are now replaced by:

$$X = \bar{X}' - uE, \quad M = \bar{M}' + mY + vE,$$

Where $\bar{X}'$ =80, $\bar{M}'$ =20, u=v=20, and E=2 (Besides, all other settings are unchanged). Therefore, the new equilibrium income (Y) should be___(49)___, and the corresponding trade balance (TB=X-M) should be___(50)___.

c) Continued to the sub-question (b), assumed that purchasing power parity (PPP) finally holds. In other words, it means that the economy should experience a real depreciation, says, E decrease from 2 to 1. At that time, the economy should have a___(51)___ (A) Trade surplus; (B) Trade deficit; (C) Balanced trade.