Part I True or False (20 points, 2 pts each)

1. The crude oil price shifts from $12 a barrel to $24 a barrel, which reduces the quantity demanded from 30 million barrels to $25 million barrels a day. Then, we can conclude that the demand for the crude oil is inelastic.

2. In response to economic recession, the government imposed a higher tax rate to luxurious consumption goods, such as jewelry and high-priced cars etc.. This tax-raising program was expected to bring in $100 million a year to the government. The actual tax revenue, however, for this program is only $20 million. Therefore, we can conclude that the elasticities of demand and supply curves for luxury goods are both low.

3. The relative price of a LCD TV to a plasma TV rose from 1997 2002. Therefore, the ratio of the marginal utility of a LCD TV to a plasma TV was lower in 2002 than in 1997 under equilibrium.

4. If a monopoly company eliminates all consumer surpluses, then this company is able to perfectly price discriminate.

5. The average cost of producing Good A is $20 and the output quantity is 200 units. If 201 units are produced, the average cost will be close to $19.95. Accordingly, the marginal cost will be between $8 and $15.

6. A new technology reduces the cost of producing LCDs. Meanwhile, preferences for LCDs decrease. The equilibrium quantity of LCDs will decrease.

7. The total output will be maximized if every country specializes in a specific good due to existence of comparative advantage.

8. An economist predicts that Taiwan's economy will grow given the increase of capital demand. Moreover, this capital demand depends on the real interest rate. Therefore, he suggests that the government lower the interest rate to boost the economy. Accordingly, we can classify this economist as a believer of New Growth Theory.

9. Lots of commentary opinions from the press argue that the only impulse to boot Taiwan's economy is to upgrade our technology. This means that their arguments may be based on the Real Business Cycle theory in which the investment and labor supply will increase as technology progresses.

10. Taiwan needs 20 hours of labor to produce good A while Philippine needs 25 hours of labor to produce good A. Labor is the only input. Therefore, we can not decide whether Taiwan has a comparative advantage in producing good A based on the information provided above.

(背面仍有題目,請繼續作答)

Part II. Choose the BEST answer (30 points, 3 pts each)

(1. John is indifferent between program A, which gives him $7000 for sure, and program B, which gives him $3000 with probability of 0.6 or $11,000 with probability of 0.4. Then John is:
(A) risk loving
(B) risk neutral
(C) risk averse
(D) none of above.

(2. David has invested $50,000 in each of 3 programs. Then, his total investment is $150,000. Each program has 50 percent chance of losing $12,500 and a 50 percent chance of making $25,000. Therefore, what is the David's probability of having negative return on the $200,000?
(A) 1/2
(B) 3/8
(C) 1/8
(D) 1/4

(3. Having pleasures of working with people who are well trained and educated is a reason that good training and education have external
(A) benefits and should be taxed
(B) costs and should be taxed
(C) cost and should be subsidized
(D) benefits and should be subsidized

(4. Suppose that the required reserve ratio by the central bank is 20%. If banks hold excess reserve and current reserves in the economy rise by $20 million, then the money supply will rise by
(A) more than $4 million
(B) less than $100 million
(C) less than $4 million
(D) more than $16 million

(5. Suppose your utility function is an exponential type, $U(w) = w - 0.002 * w^2$. Currently, option A gives you $200 with probability of 0.3 or $400 with probability of 0.7. Then, which of the following options can make you indifferent about option A?
(A) gives you $380.25 for sure
(B) gives you $250.15 for sure
(C) gives you $378.45 for sure
(D) gives you $340 for sure

16. An econometrician suggests that the consumption function of a country be represented as the following equation: (unit: million)

$$C_t = 20 + 0.65y_t + \varepsilon_t$$

where C_t is consumption, y_t is the disposable income, and ε_t is the estimated errors following classical model assumptions at time t.
Currently, we have known that the covariance between consumption and disposable income is \$6.5 million. Then, what is the standard error of the consumption for this country?
(A) \$3.162 million
(B) \$10 million
(C) \$5 million
(D) \$2.23 million

17. Following question 6 above, suppose we have additional information about the mean value of disposable income, which is \$200 million. Then, what is the mean value of consumption?
(A) \$170 million.
(B) \$130 million
(C) \$120 million
(D) \$150 million

18. Which of the following statement is WRONG?
(A) A demand-pull inflation initially is characterized by rising real output and a labor shortage.
(B) A one-time increase in the price level may be caused by continuing increases in government purchases.
(C) Demand-pull inflation always is caused by the money supply.
(D) A one-time reduction in the price level may be caused by a one-time reduction in the money supply.

19. The price of capital is \$15, the wage rate is \$5 and the ratio of the marginal product of labor to the marginal product of capital is 0.5. Then, the firm will use
(A) either more capital and less labor
(B) less capital and less labor
(C) either more labor and less capital
(D) more capital and more labor

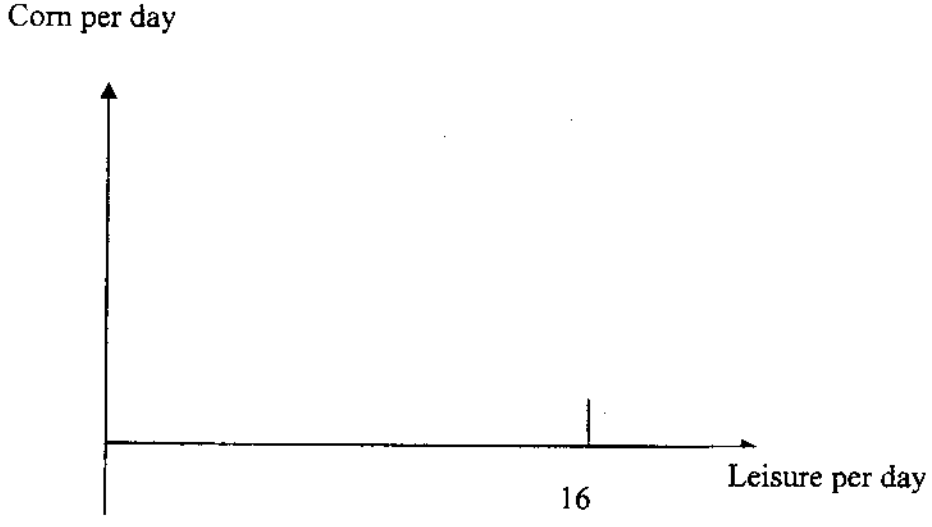
20. Which of the following statement is WRONG?
(A) A one-time increase in the money supply ultimately raises both real and nominal short-term interest rates.
(B) A one-time increase in the nominal money supply ultimately has no effect on the real money supply.
(C) When the inflation rate is zero, the real interest rate equals the nominal interest rate.
(D) When the inflation rate is positive, the real interest rate is less than the nominal interest rate.

(背面仍有題目,請繼續作答)

Part III. Answer the following two questions. Use graph to facilitate your explanation whenever needed.

3-1. (35 pts) Assume that leisure is a good in the utility function or indifference curve system of the consumer. For simplicity, assume that he consumes only two goods each day: corn (C) and leisure (L). The consumer's income is determined by the amount of time he spends at work, i.e, by the amount of leisure time he decides to forgo out of a maximum of 16 productive hours per day (after deducting his mandatory 8 hours of sleep). Given that he earns a constant hourly wage of W_0, say \$5 per hour, his actual earnings would be determined as a product of $W_0(16-L^*)$, where L^* is the number of hours of leisure he chooses to consumes. Assume that initially the consumer does not have any source of income other than his labor income. Also assume that the price of corn is \$1 per unit.

A. Trace the consumer's consumption opportunity set in the diagram below. Specially, draw his relevant budget line by solving for the maximum amount of corn he can consume after converting all of his leisure time for money at the rate of exchange of \$5 per hour.



B. What is the slope of the budget line you draw? Does it represent the price of leisure relative to that of corn?

C. Adding the consumer's indifference-curve system in the diagram above, solve graphically for the optimal quantities of corn and leisure (C^* and L^*) he will choose to consume and explain your solution. Note that by solving for the optimal quantities leisure you can also determine the consumers' optimal supply of hours of work and his actual earnings.

D. Assume, now, that the government imposes an income tax on earned income by deducting a fixed portion of the actual earnings from work, say 15%. How would the consumer's budget line change? How doe this change affect the price of leisure relative to that of corn?

E. How would the imposition of this income tax affect the optimal consumption of leisure? Discuss the relevant substation and income effect involved. Does your answer depend on whether leisure is a :"superior good"?

F. Assume, now, that the consumer is not just a net payer of taxes but that he also receives a subsidy from the government (after the introduction of income tax) in an amount that enables him to maintain his pre-tax level of utility. How would his optimal consumption of leisure be affected relative to its initial quantity (as in part C)

G. What can you infer from this analysis about the effect of taxing earned income on the incentive to work?

3-2. (15 pts) Consider a firm for which labor (L) is the only variable factor. The production function is $q = 100L - L^2$. The hire-price of labor is $w = 10$. The price of the firm's output is \$1.

A. How much labor will the firm hire?

B. Now suppose the labor has become more efficient, so that each unit of the newly-efficient labor is the equivalent of two units of the old labor. What is the new production function? How much labor will the firm hire?