NOTE: This exam consists two parts. The total is 100 points: part I: 60 points; part II: 40 points.

Part I. Multiple Choices: (2 points each)

1. The “law of demand” refers to the fact that, all other things remaining constant on the demand side of the market, when the price of a good rises
   (A) the demand curve will shift rightward.  (B) the demand curve will shift leftward.  (C) there will be a movement down along the demand curve to a larger quantity demanded.  (D) there will be a movement up along the demand curve to a smaller quantity demanded.

2. Which of the following would result in a movement along, but not a shift of the supply curve for spinach?
   (A) Disastrous weather that destroys about half of this year’s spinach crop.  (B) A newly discovered increase in the nutritional value of spinach.  (C) An increase in wages for workers in spinach fields.  (D) Great weather that produces a bumper spinach crop this year.

3. After the sugar substitute saccharin was found to cause cancer in laboratory mice, its price dropped dramatically. This change in the price was because
   (A) the supply of saccharin decreased.  (B) the demand for saccharin decreased.  (C) the government ordered the price reduction.  (D) saccharin producers felt sorry for their past customers and were making an honest attempt to compensate them.

4. When a market is in equilibrium
   (A) there is not a surplus at the existing price.  (B) there is not a shortage at the existing price.  (C) there is no automatic tendency for either the supply curve or the demand curve to shift.  (D) All of the above answers are correct.

5. Demand functions are “homogeneous of degree zero in all prices and income.” This means
   (A) a proportional increase in all prices and income will leave quantities demanded unchanged.  (B) a doubling of all prices will not alter consumption decisions.  (C) prices directly enter individuals’ utility functions.  (D) an increase in income will cause all quantities demanded to increase proportionately.

6. If an individual buys only two goods and these must be used in a fixed relationship with one another (e.g., coffee and cream for a coffee drinker who never varies the amount of cream used in each cup), then
   (A) there is no substitution effect from a change in the price of coffee.  (B) there is no income effect from a change in the price of coffee.  (C) Giffen’s Paradox must occur if both coffee and cream are inferior goods.  (D) an increase in income will not affect cream purchases.

7. The price elasticity of demand for good X is defined as
   (A) percentage change in P_x / percentage change in X.  (B) percentage change in X / percentage change in P_x.  (C) percentage change in X / percentage change in income.  (D) percentage change in X / percentage change in P_y.
8. If goods X and Y are complements, then the cross price elasticity of demand between them will be (A) positive. (B) negative. (C) zero. (D) infinity.

9. In the cartel model
   (A) firms believe that price increases result in a very elastic demand, while price decreases result in an inelastic demand for their products. (B) each firm acts as a price taker. (C) one dominant firm takes the reactions of all other firms into account in its output and pricing decisions. (D) firms coordinate their decisions to act as a multiplant monopoly.

10. In general, microeconomic theory assumes that firms attempt to maximize the difference between (A) total revenue and accounting costs. (B) price and marginal cost. (C) total revenues and economic costs. (D) economic costs and average cost.

11. In order to maximize profits, a firm that can sell all it wants without affecting price should produce
   (A) where average variable costs are minimized. (B) where marginal cost is equal to average variable costs. (C) where marginal cost is equal to price. (D) where marginal cost is a minimum.

12. A price discriminating monopolist having identical costs in two markets should charge a higher price in that market
   (A) which has a higher demand. (B) which has a more elastic demand. (C) which has a less elastic demand. (D) which has a higher marginal revenue.

13. Under the price leadership model,
   (A) most firms act independently of the leader. (B) the leader’s price is always lower than the other firms’ prices. (C) the leader’s price is always higher than the other firms’ prices. (D) all firms adjust their prices to that chosen by the leader.

14. The kinked demand curve model assumes that a firm’s rivals will
   (A) follow the firm’s price increases but not its price decreases. (B) follow the firm’s price decreases but not its price increases. (C) follow any price change the firm makes. (D) not follow any of the firm’s price changes.

15. Game theory is applicable to oligopoly behavior because
   (A) oligopolists use strategic behavior. (B) oligopolists ignore rival firms. (C) oligopolists are price takers. (D) oligopolists can only be profitable if they collude.

16. Gross domestic product (GDP) measures the
   (A) number of final goods and services produced in the economy in a given time period. (B) number of final goods and services sold in the economy in a given time period. (C) market value of old and new final goods and services sold in the economy in a given time period. (D) market value of final goods and services produced in the economy in a given time period.
17. Which of the following correctly describes GDP?
   I. GDP is a flow variable.
   II. GDP is the value of the production of an individual firm’s goods and services.
   III. GDP can be calculated using the expenditure approach or the income approach.
   (A) I only. (B) II only. (C) I and III. (D) II and III.

18. Suppose the country of Dingo experienced an economic trough in January 2001. We can conclude that
   (A) real GDP in Dingo was increasing in January 2001. (B) an expansion occurred after January 2001.
   (C) Dingo did not experience a recession in 2000. (D) Dingo's potential GDP fell in 2001.

19. Because of a bank merger, Ms. Davis lost her position as Vice President and had to seek work with other banks. Ms. Davis has the skills necessary to find a new job, thus she is best considered as
   (A) frictionally unemployed. (B) cyclically unemployed. (C) structurally unemployed. (D) naturally unemployed.

20. Factors that cause an increase in the money multiplier include:
   (A) a lowering of the required reserve ratio. (B) an increase in market interest rates. (C) an increase in expected deposit outflows. (D) only (a) and (b) of the above.

21. Discount policy affects the money supply by affecting the volume of _____ and the ____. 
   (A) excess reserves; monetary base. (B) discount loans; monetary base. (C) excess reserves; money multiplier. (D) discount loans; money multiplier.

22. The ____ traces out the points for which total quantity of goods produced equals total quantity of goods demanded.
   (A) LM curve. (B) IS curve. (C) consumption function. (D) investment schedule.

23. When the IS and LM curves are combined in the same diagram, the intersection of the two curves determines the equilibrium level of ____ as well as the ____.
   (A) aggregate output; price level. (B) aggregate output; interest rate. (C) money supply; price level. (D) consumer expenditures; interest rate.

24. Other things equal, a decrease in autonomous consumption shifts the ____ curve to the ____.
   (A) IS; right. (B) IS; left. (C) LM; left. (D) LM; right.

25. A contractionary monetary policy
   (A) shifts the LM curve to the left, reducing output and increasing interest rates. (B) shifts the LM curve to the left, reducing both real output and interest rates. (C) shifts the LM curve to the right, reducing both interest rates and real output. (D) shifts the LM curve to the right; reducing interest rates and increasing real output.
26. The aggregate demand curve is 
   (A) the total quantity of an economy’s intermediate goods demanded at all price levels.  
   (B) the total quantity of an economy’s intermediate goods demanded at a particular price level.  
   (C) the total quantity of an economy’s final goods and services demanded at a particular price level.  
   (D) the total quantity of an economy’s final goods and services demanded at different price levels.

27. The aggregate demand curve slopes downward because a decrease in the price level means a(n)______ in the real money supply and therefore a _____ level of real spending.  
   (A) increase; higher.  
   (B) increase; lower.  
   (C) decrease; lower.  
   (D) decrease; higher.

28. According to the Keynesians, a decrease in government spending, other things equal, shifts the aggregate _____ curve to the _____.  
   (A) demand; right.  
   (B) demand; left.  
   (C) supply; left.  
   (D) supply; right.

29. Stagflation is a situation of  
   (A) stable prices and falling output.  
   (B) falling prices and falling output.  
   (C) rising prices and rising output.  
   (D) rising prices and falling output.

30. According to aggregate demand and supply analysis, America’s involvement in the Vietnam War had the effect of  
   (A) increasing aggregate output.  
   (B) lowering unemployment.  
   (C) raising the price level.  
   (D) doing all of the above.
Part II. Answer all four questions (40 points)

1. At the campus of Chaoyang University of Technology, there are two bakers, Lin and Wang. Lin's bread tastes just like Wang's. Lin has constant marginal costs of $1 per loaf of bread. Wang has constant marginal costs of $2 per loaf. The inverse demand function for bread at the campus of Chaoyang University of Technology is \( p(q) = 6 - 0.01q \), where \( q \) is the total number of loaves sold per day.
   
   (a) Find the reaction function for Lin and Wang and the Cournot output levels for two bakers. (4 points)
   
   (b) What is the market price and how many loaves of bread will be sold at that price? (2 points)

   Suppose now that Wang always gets up an hour early than Lin and has his bread in the oven before Lin gets started. If Lin always finds out how much bread Wang has in the his oven and if Wang knows that Lin knows this, then Wang can like a Stackelberg leader.

   (c) Find the Stackelberg output levels for two bakers. (4 points)

2. A firm has a production function given by \( f(x_1, x_2) = \min \{2x_1 + x_2, x_1 + 2x_2\} \). What is the conditional demand function for factors \( x_1 \) and \( x_2 \) as a function of factor prices \( \omega_1, \omega_2 \) and output \( y \)? What is the cost function for this technology? (10 points)

3. Give the definitions of the following terms. (Note: Answer briefly for each within 50 words) (4 points each)
   
   (a) Inflationary Gap.
   
   (b) Fiscal Policy.
   
   (c) High Powered Money.
   
   (d) Full Employment.
   
   (e) Open Market Operation (OMO).