Part I: Multiple Choices (60%)
Answer ALL questions.

1. Coins in people's pockets and purses are:
   (A). included in M1, but not in M2.
   (B). included in both M1 and M2.
   (C). included in M2, but not in M1.
   (D). excluded from M1 and M2 because people can exchange them for legal tender notes.

2. Suppose the demand for money and the supply of money increase simultaneously. We can:
   (A). expect the interest rate to rise and bond prices to fall.
   (B). expect the interest rate to fall and bond prices to rise.
   (C). the nominal GDP to expand.
   (D). not predict what will happen to interest rates or bond prices.

Use the following to answer question 3:

3. Refer to the above money market diagrams. The asset demand for money is shown by:
   (A). $D_1$.
   (B). $D_2$.
   (C). $D_3$.
   (D). $S$.

4. When economists say that money serves as a unit of account, they mean that it is:
   (A). away to keep wealth in a readily spendable form for future use.
   (B). a means of payment.
   (C). a monetary unit for measuring and comparing the relative values of goods.
   (D). declared as legal tender by the government.

5. A single commercial bank must meet a 25 percent reserve requirement. If the bank has no excess reserves initially and $5,000 of cash is deposited in the bank, it can increase its loans by a maximum of:
   (A). $1,250.
   (B). $120,000.
   (C). $5,000.
   (D). $3,750.
6. Which of the following is correct?
   (A). Both the granting and repaying of bank loans expand the aggregate money supply.
   (B). Granting and repaying bank loans do not affect the money supply.
   (C). Granting a bank loan destroys money; repaying a bank loan creates money.
   (D). Granting a bank loan creates money; repaying a bank loan destroys money.

Use the following to answer question 7:

Answer the next question on the basis of the following balance sheet for the First National Bank of Bunco. All figures are in millions.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and net worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserves</td>
<td>$20</td>
</tr>
<tr>
<td>Securities</td>
<td>25</td>
</tr>
<tr>
<td>Loans</td>
<td>15</td>
</tr>
<tr>
<td>Property</td>
<td>90</td>
</tr>
<tr>
<td>Checkable Deposits</td>
<td>$100</td>
</tr>
<tr>
<td>Capital Stock</td>
<td>50</td>
</tr>
</tbody>
</table>

7. Refer to the above data. If this bank has excess reserves of $6 million, the legal reserve ratio must be:
   (A). 10 percent.
   (B). 12 percent.
   (C). 14 percent.
   (D). 20 percent.

8. If the demand for a product is elastic, then total revenue will:
   (A). increase whether price increases or decreases.
   (B). be constant in response to a price change.
   (C). fall as price falls.
   (D). rise as price falls.

9. A leftward shift in the supply curve of product X will increase equilibrium price to a greater extent the:
   (A). more elastic the supply curve.
   (B). larger the elasticity of demand coefficient.
   (C). more elastic the demand for the product.
   (D). more inelastic the demand for the product.

10. If the price elasticity of demand for a product is unity, a decrease in price will:
    (A). have no effect upon the amount purchased.
    (B). increase the quantity demanded and increase total revenue.
    (C). increase the quantity demanded, but decrease total revenue.
    (D). increase the quantity demanded, but total revenue will be unchanged.

11. Suppose we find that the price elasticity of demand for a product is 3.5 when its price is increased by 2 percent. We can conclude that quantity demanded:
    (A). increased by 7 percent.
    (B). decreased by 7 percent.
    (C). decreased by 9 percent.
    (D). decreased by 12 percent.
12. In which price range of the accompanying demand schedule is demand elastic?

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity demanded</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

(A). $4-$3  
(B). $3-$2  
(C). $2-$1  
(D). below $1

13. A shortage can be eliminated by
(A). increasing demand.  
(B). government lowering the price.  
(C). increasing the quantity demanded.  
(D). allowing the price to rise.

Use the following to answer question 14:

14. Refer to the above diagram. Total revenue at price $P_1$ is indicated by area(s):
(A). $C + D$  
(B). $A + B$  
(C). $A + C$  
(D). $A$

15. If the price elasticity of demand for gasoline is 0.20:
(A). the demand for gasoline is linear.  
(B). a rise in the price of gasoline will reduce total revenue.  
(C). a 10 percent rise in the price of gasoline will decrease the amount purchased by 2 percent.  
(D). a 10 percent fall in the price of gasoline will increase the amount purchased by 20 percent.
16. Other things the same, if a price change causes total revenue to change in the opposite direction, demand is:
   (A). perfectly inelastic.
   (B). relatively elastic.
   (C). relatively inelastic.
   (D). of unit elasticity.

17. The more time consumers have to adjust to a change in price:
   (A). the smaller will be the price elasticity of demand.
   (B). the greater will be the price elasticity of demand.
   (C). the more likely the product is a normal good.
   (D). the more likely the product is an inferior good.

18. If the supply of product X is perfectly elastic, an increase in the demand for it will increase:
   (A). equilibrium quantity but reduce equilibrium price.
   (B). equilibrium quantity but equilibrium price will be unchanged.
   (C). equilibrium price but reduce equilibrium quantity.
   (D). equilibrium price but equilibrium quantity will be unchanged.

19. Suppose the price of local cable TV service increased from $16.20 to $19.80 and as a result the number of cable subscribers decreased from 224,000 to 176,000. Along this portion of the demand curve, price elasticity of demand is:
   (A). 0.8.
   (B). 1.2.
   (C). 1.6.
   (D). 8.0

20. In which of the following instances is the effect on equilibrium price indeterminate, that is, dependent on the magnitude of the shifts in supply and demand?
   (A). demand rises and supply rises
   (B). supply falls and demand remains constant
   (C). demand rises and supply falls
   (D). supply rises and demand falls

Use the following to answer question 21:
21. The above diagram concerns supply adjustments to an increase in demand \((D_1 \text{ to } D_2)\) in the immediate market period, the short run, and the long run. On the basis of this illustration we can conclude that:
   (A). short-run adjustments are more economically efficient than are long-run adjustments.
   (B). the amount of time producers have to adjust to a change in demand is not a determinant of supply elasticity.
   (C). supply is more elastic the greater the amount of time producers have to adjust to a change in demand.
   (D). supply is less elastic the greater the amount of time producers have to adjust to a change in demand.

22. A long-lasting surplus of wheat can result from a
   (A). large harvest caused by perfect growing weather.
   (B). government-set price floor on wheat.
   (C). fall in the price of corn, which is a substitute for wheat.
   (D). change in tastes away from products made from wheat.

Use the following to answer questions 23-24:

![Graph of total cost and total revenue vs. output]

23. Refer to the above short-run data. Total fixed cost for this firm is:
   (B). $300.
   (C). $200.
   (D). $100.

24. Refer to the above short-run data. Which of the following is correct?
   (A). This firm will maximize its profit at 440 units of output.
   (B). Any level of output between 100 and 440 units will yield an economic profit.
   (C). This firm's marginal revenue rises with output.
   (D). Any level of output less than 100 units or greater than 440 units is profitable.
25. Suppose a purely competitive increasing-cost industry is in long-run equilibrium. Now assume that a decrease in consumer demand occurs. After all resulting adjustments have been completed, the new equilibrium price:
   (A). and industry output will be less than the initial price and output.
   (B). will be greater than the initial price, but the new industry output will be less than the original output.
   (C). will be less than the initial price, but the new industry output will be greater than the original output.
   (D). and industry output will be greater than the initial price and output.

26. Resources are efficiently allocated when production occurs where:
   (A). marginal cost equals average variable cost.
   (B). price is equal to average revenue.
   (C). price is equal to marginal cost.
   (D). price is equal to average variable cost.

27. In the short run a purely competitive seller will shut down if:
   (A). it cannot produce at an economic profit.
   (B). price is less than average variable cost at all outputs.
   (C). price is less than average fixed cost at all outputs.
   (D). there is no point at which marginal revenue and marginal cost are equal.

Use the following to answer question 28:

28. Refer to the above diagram for a purely competitive producer. The firm’s short-run supply curve is:
   (A). the abcd segment of the MC curve.
   (B). the bcd segment of the MC curve.
   (C). the cd segment of the MC curve.
   (D). not shown.

29. The MR = MC rule applies:
   (A). to firms in all types of industries.
   (B). only when the firm is a "price taker."
   (C). only to monopolies.
   (D). only to purely competitive firms.
30. Refer to the above diagram. At the profit-maximizing output, total profit is:
   (A). $efbc.
   (B). $fgab.
   (C). $egac.
   (D). $0fn.

Use the following to answer question 31:

Answer the next question on the basis of the following cost data for a purely competitive seller:

<table>
<thead>
<tr>
<th>Total fixed cost</th>
<th>Total variable cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td>1</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>120</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
<td>220</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>300</td>
</tr>
<tr>
<td>6</td>
<td>50</td>
<td>390</td>
</tr>
</tbody>
</table>

31. Refer to the above data. If product price is $75, the firm will produce:
   (A). 3 units of output.
   (B). 4 units of output.
   (C). 5 units of output.
   (D). 6 units of output.
32. The Ajax Manufacturing Company is selling in a purely competitive market. Its output is 100 units which sell at $4 each. At this level of output total cost is $600, total fixed cost is $100, and marginal cost is $4. The firm should:
(A). reduce output to about 80 units.
(B). expand its production.
(C). continue to produce 100 units.
(D). produce zero units of output.

Use the following to answer question 33:

Answer the next question on the basis of the following data confronting a firm:

<table>
<thead>
<tr>
<th>Output</th>
<th>Marginal revenue</th>
<th>Marginal cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>$16</td>
<td>$10</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>13</td>
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<tr>
<td>4</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>21</td>
</tr>
</tbody>
</table>

33. Refer to the above data. This firm is selling its output in a(n):
(A). imperfectly competitive market.
(B). monopolistic market.
(C). purely competitive market.
(D). oligopolistic market.

Use the following to answer question 34:

![ATC Diagram](image)

34. Refer to the above diagram showing the average total cost curve for a purely competitive firm. Suppose that average variable cost is $8 at 40 units of output. At that level of output, total fixed cost:
(A). is $2.
(B). is $40.
(C). is $80.
(D). cannot be determined from the information provided.
35. Advertising can enhance economic efficiency when it:
   (A). increases brand loyalty.
   (B). expands sales such that firms achieve substantial economies of scale.
   (C). keeps new firms from entering profitable industries.
   (D). is undertaken by pure competitors.

36. Excess capacity refers to the:
   (A). amount by which actual production falls short of the minimum ATC output.
   (B). fact that entry barriers artificially reduce the number of firms in an industry.
   (C). differential between price and marginal costs which characterizes monopolistically
       competitive firms.
   (D). fact that most monopolistically competitive firms encounter diseconomies of scale.

37. If a product such as cement or bricks is costly to ship and, therefore, markets are very localized,
    the national concentration ratio for that industry:
   (A). will be greater than 50 percent.
   (B). may understate the degree of monopoly.
   (C). may overstate the degree of monopoly.
   (D). will yield an accurate impression of the degree of monopoly.

38. The kinked-demand curve model helps to explain price rigidity because:
   (A). there is a gap in the marginal revenue curve within which changes in marginal cost will
       not affect output or price.
   (B). demand is inelastic above and elastic below the going price.
   (C). the model assumes firms are engaging in some form of collusion.
   (D). the associated marginal revenue curve is perfectly elastic at the going price.

39. Suppose that an industry is characterized by a few firms and price leadership. We would
    expect that:
   (A). price would equal marginal cost.
   (B). price would equal average total cost.
   (C). price would exceed both marginal cost and average total cost.
   (D). marginal revenue would exceed marginal cost.

40. The monopolistically competitive seller's demand curve will become more elastic the:
   (A). more significant the barriers to entering the industry.
   (B). greater the degree of product differentiation.
   (C). larger the number of competitors.
   (D). smaller the number of competitors.

41. Suppose the only three existing manufacturers of video game players signed a written contract
    by which each agreed to charge the same price for products and to distribute their products only
    in the geographical area assigned them in the contract. This best describes:
   (A). cost-plus pricing.
   (B). multiproduct pricing.
   (C). a cartel.
   (D). price leadership.
42. The monopolistically competitive firm shown in the above figure:
(A). will realize allocative efficiency at its profit-maximizing output.
(B). cannot operate at a loss.
(C). is in long-run equilibrium.
(D). is realizing an economic profit.

43. Monopolistic competition resembles pure competition because:
(A). both industries emphasize nonprice competition.
(B). in both instances firms will operate at the minimum point on their long-run average total cost curves.
(C). both industries entail the production of differentiated products.
(D). barriers to entry are either weak or nonexistent.

Use the following to answer question 44:

44. Refer to the above diagram for a monopolistically competitive firm in short-run equilibrium. The profit-maximizing output for this firm will be:
(B). 180.
(C). 160.
(D). 100.
45. If the number of firms in a monopolistically competitive industry increases and the degree of product differentiation diminishes:
   (A). the likelihood of realizing economic profits in the long run would be enhanced.
   (B). individual firms would now be operating at outputs where their average total costs would be higher.
   (C). the industry would more closely approximate pure competition.
   (D). the likelihood of collusive pricing would increase.

46. In long-run equilibrium monopolistic competition entails:
   (A). an efficient allocation of resources.
   (B). an overallocation of resources.
   (C). an underallocation of resources.
   (D). production at the minimum attainable average total cost.

Use the following to answer question 47:

![Diagram of cost and revenue curves]

47. Refer to the above diagram for a monopolistically competitive firm. Long-run equilibrium output will be:
   (A). greater than \( E \).
   (B). \( E \).
   (C). \( D \).
   (D). \( C \).

48. An industry comprised of a very large number of sellers that are producing a homogeneous or standardized product is called:
   (A). monopolistic competition
   (B). oligopoly
   (C). pure monopoly
   (D). pure competition
Use the following to answer question 49:

$$\begin{array}{c|ccc|c}
\text{Y's prices} & $6 & $5 & $4 \\
\hline
\text{X's prices} & \text{Y} & $6 & $5 & $4 \\
\hline
$7 & 12 & 14 & 15 \\
16 & 15 & 13 \\
$6 & 9 & 11 & 13 \\
19 & 16 & 14 \\
$5 & 10 \\
18 & 17 & 15 \\
\end{array}$$

49. Refer to the above profits-payoff table for a duopoly. If initially firms X and Y are charging $5 and $4 respectively:
(A). the two firms will be maximizing joint profits.
(B). Y will find it advantageous to raise its price if it was certain X would not alter its price.
(C). X will find it advantageous to raise its price if it was certain Y would not alter its price.
(D). both firms would find it advantageous to collude to raise their prices by $1 each.

Use the following to answer question 50:

[Graph with MC and ATC curves]

50. Refer to the above diagram. Equilibrium price is:
(A). e.
(B). d.
(C). c.
(D). b.

***** The End of Part I *****
Part II: Problems (40%)  
Answer any **TWO** out of the following three questions.

1. (20%) Suppose an economy is currently under recession. To stimulate the economy, the central bank increases money supply. The result is that real GDP rises without any change in the price level.  
   a. (8%) Explain any two tools of the central bank to increase money supply.  
   b. (12%) Explain how the increase in money supply affects the equilibrium real GDP and the price level with the help of diagrams.

2. (20%)  
   a. (6%) What are the short-run and long-run average cost curves of a firm? What is their relationship? Explain.  
   b. (6%) What is 'minimum efficient scale'?  
   c. (8%) What insights would the concept of 'minimum efficient scale' give about the size and number of firms in an industry?

3. (20%) In the table below are cost and demand data for a pure monopolist.

<table>
<thead>
<tr>
<th>Quantity demanded</th>
<th>Price</th>
<th>Marginal revenue</th>
<th>Average cost</th>
<th>Marginal cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$105.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>96.00</td>
<td>$96.00</td>
<td>$144.00</td>
<td>$144.00</td>
</tr>
<tr>
<td>2</td>
<td>87.00</td>
<td>78.00</td>
<td>90.00</td>
<td>36.00</td>
</tr>
<tr>
<td>3</td>
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<td>70.34</td>
<td>30.00</td>
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<td>4</td>
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<td>42.00</td>
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<td>51.00</td>
</tr>
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<td>7</td>
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<td>54.00</td>
</tr>
<tr>
<td>8</td>
<td>33.00</td>
<td>-30.00</td>
<td>57.50</td>
<td>55.50</td>
</tr>
<tr>
<td>9</td>
<td>24.00</td>
<td>-48.00</td>
<td>57.33</td>
<td>56.00</td>
</tr>
</tbody>
</table>

   a. (4%) What is the level of price, output, and amount of profit for an unregulated monopolist? Explain briefly.  
   b. (4%) Using the data in the table, what is the price, output, and profit for a regulated monopolist that sets price equal to marginal cost? Explain briefly.  
   c. (4%) Using the data in the table, what is the price, output, and profit for a regulated monopolist that charges a "fair-return" price? Explain briefly.  
   d. (8%) Analyze the effect of regulation on the allocation of resources. Which situation is most efficient? Which situation is most likely to be chosen by government? Why?

***** The End of Part II *****