

Question Paper
Economics (CFA520-02): April 2010

- Answer all 79 questions.
- Marks are indicated against each question.

Total Marks : 100

1. Which of the following is **not** a characteristic of a perfectly competitive market?
- (a) Large number of firms in the industry
(b) Resources are very mobile
(c) Firms face downward-sloping demand curve
(d) Outputs of the firms are perfect substitutes for one another
(e) Entry and exit of firms is free for the industry. (1 mark)
2. Which of the following equations is **correct** concerning to the relationships among the firm's total cost functions?
- (a) $TC = TFC - TVC$
(b) $TFC = TC - TVC$
(c) $TVC = TFC - TC$
(d) $TC = TVC - TFC$
(e) $TC = TVC - AFC$. (1 mark)
3. Which of the following is **not** considered as a determinant of supply?
- (a) Number of firms
(b) Technology
(c) Taxes and subsidies
(d) Number of buyers
(e) Resource prices. (1 mark)
4. Both marginal and average costs are equal to each other when
- (a) Marginal cost is minimum
(b) Average cost is minimum
(c) Fixed cost is minimum
(d) Total cost is maximum
(e) Marginal cost is maximum. (1 mark)
5. A current account surplus of Rs.20 billion implies that
- (a) There is a capital account surplus of Rs.20 billion
(b) There are net imports of Rs.20 billion
(c) Net foreign borrowings amount to Rs.20 billion
(d) Net acquisition of foreign assets amount to Rs.20 billion
(e) The country is decreasing its net holding of foreign assets. (1 mark)
6. The curve that represents the negative relationship between aggregate output and the price level is known as
- (a) Aggregate supply curve
(b) Aggregate demand curve
(c) Aggregate production function
(d) Money demand curve
(e) Laffer curve. (1 mark)
7. Which of the following statements is **false**?
- (a) Purchases of new homes for leasing purpose are included in the investment component of GDP
(b) GDP measures the value of sales of goods and services during a year
(c) GDP measures new production only
(d) Any change in business inventories goes in the investment component of GDP
(e) House work done by house-wives is not included in measuring the national income. (1 mark)

8. If government spending increases by the same amount as taxes, the effect is

- (a) Neutral
- (b) Expansionary
- (c) Contractionary
- (d) First expansionary then contractionary
- (e) Indeterminable.

(1 mark)

9. Which of the following situation characterizes Oligopolistic industries?

- (a) A few dominant firms and substantial barriers to entry
- (b) A single firm and low entry barriers
- (c) A few large firms and no entry barriers
- (d) A large number of small firms and no entry barriers
- (e) A single firm and high entry barriers.

(1 mark)

10. The demand schedule faced by an artist for reproductions of his paintings:

Price (Rs.)	Quantity Demanded (Units)
3,000	300
4,000	200
5,000	100

His marginal revenue decreases as output increases because

- (a) The artist must lower the price on all reproductions in order to sell a larger quantity
- (b) The price is equal to marginal revenue
- (c) The artist works in a perfectly competitive market for art
- (d) Total revenue is increasing at an increasing rate
- (e) Marginal cost is rising.

(1 mark)

11. The price elasticity of demand is described as the responsiveness of

- (a) Price to a change in income
- (b) Quantity demanded to a change in price
- (c) Price to a change in quantity demanded
- (d) Quantity demanded to a change in income
- (e) Quantity demanded to a change in advertising expenditure.

(1 mark)

12. What is the reason behind the instability of the cartel agreements?

- (a) Cartel agreements tend to lower profits
- (b) A firm can increase its profits by cheating on the agreement
- (c) Agreements become unnecessary as the number of firms in the cartel increases
- (d) Cutting output and raising prices will benefit each firm in the cartel
- (e) Cartels are not legally permitted.

(1 mark)

13. Which of the following school of thoughts believe that wages and prices are flexible in the short run?

- (a) Only Monetarists
- (b) Only Keynesians
- (c) Monetarists and Keynesians
- (d) Monetarists and New Classical Economists
- (e) Rational expectations.

(1 mark)

14. Which of the following mentioned entities of an economy loses purchasing power, if inflation is higher than anticipated and benefits are not indexed?

- (a) Only borrowers
- (b) Only lenders
- (c) Borrowers and lenders
- (d) Lenders and retirees
- (e) Borrowers and retirees.

(1 mark)

5. Assume that as a result of an improvement in technology, the work done by Simon (who works on an assembly line) can be done more efficiently by a machine. Which of the following unemployment is best suited in the case of Simon?

- (a) Cyclical unemployment
- (b) Structural unemployment
- (c) Frictional unemployment
- (d) Natural unemployment
- (e) Disguised unemployment.

(1 mark)

16. Which of the following represents an action by the Reserve Bank of India which is designed to increase the money supply?

- (a) An increase in the statutory liquidity ratios
- (b) An increase in the discount rate
- (c) An increase in government spending
- (d) Buying government securities in the open market
- (e) An increase in the required reserve ratio.

(1 mark)

17. Which of the following is **false** about first-degree price discrimination?

- (a) The monopolist will be able to extract the entire consumers' surplus
- (b) The price of each unit will be different
- (c) By following first degree price discrimination the profit of the monopolist will be more than what he could otherwise earn at a single price
- (d) The price of the first unit will be less than that of the subsequent units
- (e) It is another name for perfect price discrimination.

(1 mark)

18. If a firm minimizes its losses by shutting down in the short run, then at all output levels beyond the shut-down point,

- (a) Variable cost would exceed total revenue
- (b) Total revenue exceeds total cost
- (c) Marginal revenue exceeds marginal cost
- (d) Total cost is zero
- (e) Total revenue is zero.

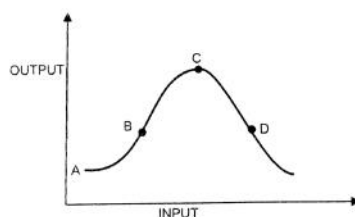
(1 mark)

19. Suppose the demand for meals at a medium-priced restaurant is elastic. If the management of the restaurant is considering an increase in prices, it can expect a relatively

- (a) Large decrease in quantity demanded
- (b) Large decrease in demand
- (c) Small decrease in quantity demanded
- (d) Small decrease in demand
- (e) No change in quantity demanded.

(1 mark)

20. Which of the following statements is **true** based on the production curve below?



- (a) The marginal product curve peaks at point C
- (b) At point B, total product begins to increase at a decreasing rate
- (c) At point B, producers might want to consider building larger capacity
- (d) Returns to scale are increasing from C to D
- (e) From A to B, the producer is experiencing decreasing returns to scale.

(1 mark)

21. Which of the following could be a cause of demand-pull inflation?

- (a) War in the Middle East, which can increase oil prices
- (b) Drought in the Midwest, which can cause crop failures
- (c) Increased government spending in the absence of increased taxes
- (d) Suppliers who increase their profit margins by raising prices faster than increase their costs
- (e) Increase in wages in the US, which can increase gasoline prices.

(1 mark)

22. Which of the following statements is **true** according to classical economics?

- (a) The economy is always at full employment in the short run
- (b) The economy moves to full employment in the long run
- (c) Business cycles explain long-run fluctuations in the economy
- (d) The economy is rarely at full employment
- (e) The economy is at full employment in the short run, but in the long run, business cycle movements lead the economy away from full employment.

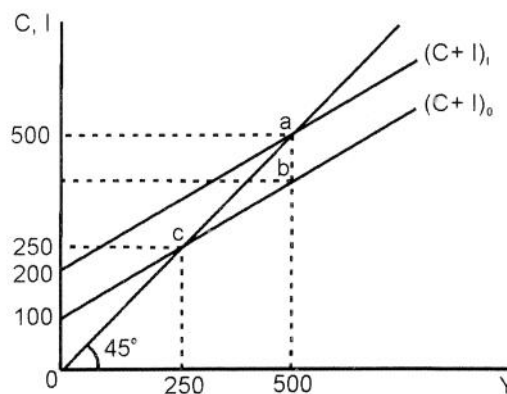
(1 mark)

23. Suppose the Reserve Bank of India (RBI) sells Government bonds in the open market. Which of the following will occur?

- (a) The money supply will decrease and the interest rate will increase
- (b) The money supply will increase and the interest rate will decrease
- (c) The money supply will increase and the interest rate will increase
- (d) The money supply will decrease and the interest rate will decrease
- (e) The money supply will increase and the interest rate will remain same.

(1 mark)

24. Refer to the graph below:



The movement from c to b indicates that there is an increase in

- (a) The value of autonomous expenditures ($a + I$)
- (b) The value of the multiplier
- (c) The marginal propensity to consume
- (d) The value of aggregate expenditure for every level of income
- (e) Income.

(1 mark)

25. The behavior of output to changes in all the factors of production is explained by

- (a) Law of equi-marginal utility
- (b) Law of diminishing marginal utility
- (c) Law of diminishing marginal product
- (d) Law of supply
- (e) Law of returns to scale.

(1 mark)

26. A perfectly competitive market cannot influence

- (a) The quantity of the good that it produces
- (b) The quantity of labor it uses in production
- (c) The amount of capital to employ in production
- (d) The level of advertising that it uses
- (e) The price of the product it sells.

(1 mark)

27. Suppose a ceiling price on apartment rents is set above the equilibrium price for apartment rents. Which of the following will occur?

- (a) The amount of apartments actually rented will be less than the equilibrium quantity
- (b) The amount of apartments actually rented will be greater than the equilibrium quantity
- (c) The equilibrium price and quantity will continue to prevail
- (d) The equilibrium price of apartment will decrease but the equilibrium quantity of apartment remain the same
- (e) There will be a shortage of apartments.

(1 mark)

28. Suppose input prices for a perfectly competitive industry remain constant as the output of the industry expands. In the long run, the industry supply curve is
- Positively sloped
 - Negatively sloped
 - Horizontal
 - Vertical
 - Rectangular hyperbola.
- (1 mark)
29. Which one of the following transactions is recorded in the current account of the balance of payments?
- One country buys cars from another country
 - Residents of one country buy property in another country
 - Government purchases of foreign currency
 - Residents of one country buy equity in a foreign company
 - One country allows FDI from another country.
- (1 mark)
30. Which of the following statements is **true** with respect to consumer spending?
- Most of the variation in consumption spending can be explained by changes in the interest rate
 - Most of the variation in consumption spending can be explained by changes in wealth
 - There is no single factor that explains much of the variation in consumption spending
 - Most of the variation in consumption spending can be explained by changes in debt
 - Most of the variation in consumption spending can be explained by changes in disposable income.
- (1 mark)
31. According to the Classical Aggregate Supply model, at the level of full employment, the aggregate supply curve is
- Horizontal straight line
 - Vertical straight line
 - Upward rising
 - Downward sloping
 - Rectangular hyperbola.
- (1 mark)
32. Which of the following is most likely to happen during a recession?
- Decrease in inventory
 - Producers will be cautiously optimistic
 - Capacity under utilization
 - Expansion in bank credit
 - Increasing income levels.
- (1 mark)
33. Which of the following statements is **not true**?
- Every choice involves opportunity costs
 - Opportunity costs are the highest-valued alternatives that must be forgone when a choice is made
 - Opportunity costs can always be expressed in money terms
 - The full cost of an activity includes the opportunity costs
 - Economists refer to the forgone benefits of the next-best alternative as opportunity costs.
- (1 mark)
34. Tim's Shoe Shine Shop operates in a perfectly competitive market. If its marginal revenue is Rs. 5 per shoe shine, then
- The next shoe shine will bring in less than Rs.5 in additional revenue
 - The next shoe shine will bring in more than Rs.5 in additional revenue
 - Price is less than Rs.5
 - The market price per shoe shine is Rs.5
 - Price is equal to total revenue at all output levels.
- (1 mark)
35. Consider both coffee and tea are substitutes. Which of the following statements is **true**?
- The cross-price elasticity of demand between coffee and tea is zero
 - The cross-price elasticity of demand between coffee and tea is negative
 - The cross-price elasticity of demand between coffee and tea is positive
 - The income elasticity of demand between coffee and tea is positive
 - The income elasticity of demand between coffee and tea is negative.
- (1 mark)

36. In long-run equilibrium the monopolist (as opposed to a perfectly competitive firm) can make profit because of
- (a) Blocked entry
 - (b) High prices he charges
 - (c) Low long run average costs
 - (d) Advertising
 - (e) Price discrimination. (1 mark)
37. Which of the following events shifts the short-run aggregate supply curve to the right?
- (a) A decrease in the money supply
 - (b) An increase in price expectations
 - (c) An increase in government spending on military equipment
 - (d) A decrease in oil prices
 - (e) An increase in interest rates. (1 mark)
38. What would happen to output when aggregate expenditure is less than GDP in the short-run Keynesian model?
- (a) Output would decline as firms cut production to stop the buildup of inventories
 - (b) Output would increase as firms cut their prices to try to stop depletion of inventories
 - (c) Output would increase as firms increase production to try to stop depletion of inventories
 - (d) Output would decline as firms increase their prices to stop the buildup of inventories
 - (e) Output would remain unchanged indefinitely unless government takes action. (1 mark)
39. What would happen if interest rate increases?
- (a) Planned investment decreases and aggregate expenditure decreases
 - (b) Planned investment increases and aggregate expenditure increases
 - (c) Planned investment increases and aggregate expenditure remain constant
 - (d) Planned investment decreases, but aggregate expenditure remain constant
 - (e) Planned investment remains constant, but aggregate expenditure decreases. (1 mark)
40. The period in the business cycle from a trough to peak is called as
- (a) Recession
 - (b) Slump
 - (c) Depression
 - (d) Expansion
 - (e) Stagflation. (1 mark)
41. According to the short-run Phillips curve,
- (a) Inflation is positively related to unemployment
 - (b) Inflation is not related to unemployment
 - (c) Low inflation and low unemployment can occur simultaneously
 - (d) Inflation is inversely related to unemployment
 - (e) Inflation is positively related to exchange rate. (1 mark)
42. The severity of crowding-out effect would be reduced if
- (a) The Reserve Bank of India (RBI) increases the money supply and at the same time the Government of India increases government spending
 - (b) The RBI decreases the money supply and at the same time the Government of India increases government spending
 - (c) The RBI does not change the money supply when the Government of India increases government spending
 - (d) The RBI decreases the money supply and at the same time the Government of India decreases government spending
 - (e) Business firms become pessimistic about the future. (1 mark)
43. If a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules require that firm to
- (a) Increase its output in both perfect and imperfect competition
 - (b) Increase its output in perfect but not necessarily in imperfect competition
 - (c) Increase its output in imperfect but not necessarily in perfect competition
 - (d) Decrease its output, in both perfect and imperfect competition
 - (e) Increase price, not output, in both perfect and imperfect competition. (1 mark)

44. Which of the following is **true** if the investment demand curve is vertical?
- (a) Both monetary and fiscal policies are ineffective
 - (b) Both monetary and fiscal policies are effective
 - (c) Monetary policy is effective, but fiscal policy is ineffective
 - (d) Monetary policy is ineffective, but fiscal policy is effective
 - (e) Effectiveness or ineffectiveness of monetary and fiscal policies have no relation with the investment demand curve.
- (1 mark)
45. Which of the following is **not** a characteristic of monopolistic competition?
- (a) Product differentiation
 - (b) Ease of entry into the industry
 - (c) A relatively large number of sellers
 - (d) A homogeneous product
 - (e) A relatively large number of buyers.
- (1 mark)
46. Which of the following is consistent with the law of supply?
- (a) As the price of calculators decreases, the supply of calculators remain the same, ceteris paribus
 - (b) As the price of calculators decreases, the supply of calculators increases, ceteris paribus
 - (c) As the price of calculators increases, the quantity supplied of calculators increases, ceteris paribus
 - (d) As the price of calculators increases, the quantity supplied of calculators decreases, ceteris paribus
 - (e) As the price of calculators increases, the quantity supplied of calculators remains the same, ceteris paribus.
- (1 mark)
47. As the price of milk increases, what would reasonably be expected to happen to the equilibrium price and equilibrium quantity for coffee? (Assume milk and coffee is to be complements.)
- (a) Price decreases; quantity decreases
 - (b) Price increases; quantity decreases
 - (c) Price increases; quantity increases
 - (d) Price decreases; quantity increases
 - (e) Price decreases; quantity remain the same.
- (1 mark)
48. The best possible factor input combination in the production process is explained by the
- (a) Expansion Path
 - (b) Isoquant
 - (c) Iso-cost line
 - (d) Indifference curve
 - (e) Production possibility frontier.
- (1 mark)
49. Which of the following is **not** a major determinant of economic growth?
- (a) Tastes and preferences of consumers
 - (b) Technological advancement
 - (c) Natural resources
 - (d) Physical capital
 - (e) Human resources.
- (1 mark)
50. What are the three most important macroeconomic goals?
- (a) Rapid economic growth, full employment, and low interest rates
 - (b) Rapid economic growth, low unemployment, and a balanced budget
 - (c) Rapid economic growth, full employment, and stable prices
 - (d) Rapid economic growth, zero unemployment, and falling prices
 - (e) Rapid economic growth, a balanced budget, and high interest rates.
- (1 mark)

51. Consider the following data, extracted from the National Income Accounts of a country:

Particulars	MUC
GNP at market prices	8,500
Transfer payments	210
Indirect taxes	865
Personal taxes	1,015
Depreciation	950
Undistributed corporate profits	140
Corporate taxes	375
Subsidies	100

Personal Income in the country is

- (a) 5,212 MUC
- (b) 5,605 MUC
- (c) 6,150 MUC
- (d) 6,770 MUC
- (e) 6,480 MUC.

(2 marks)

52. The following information is given for an economy:

Finance ratio : 0.20

Intermediation ratio : 0.80

If the National Income of the economy is 60,000 MUC, the total issues would be

- (a) 6,000 MUC
- (b) 12,000 MUC
- (c) 1,28,000 MUC
- (d) 60,000 MUC
- (e) 94,000 MUC.

(2 marks)

53. The average product of labor (AP_L) is given as $60L - L^2$, the maximum possible total product of labor (TP_L) is

- (a) 30,000 units
- (b) 32,000 units
- (c) 33,000 units
- (d) 35,000 units
- (e) 36,000 units.

(2 marks)

54. The demand function for a commodity is estimated as follows:

$$Q_d = 6,50,000 - 45P$$

The arc price elasticity of demand between the prices of Rs. 5,000 and Rs. 6,000 is

- (a) -0.615
- (b) -0.714
- (c) -0.748
- (d) -0.789
- (e) -0.864.

(2 marks)

55. A product priced at Rs.900 has absolute price elasticity of demand equal to 6. What is the marginal revenue?

- (a) Rs.700
- (b) Rs.750
- (c) Rs.800
- (d) Rs.850
- (e) Rs.900.

(1 mark)

56. In a perfectly competitive market, the demand function for a firm is $P = 3Q - 25$. If the average cost is Rs.5, what is the output at which the firm earns normal profits?

- (a) 3 units
- (b) 8 units
- (c) 10 units
- (d) 11 units
- (e) 33 units.

(2 marks)

57. The monetary liabilities of the central bank of an economy are 20,000 MUC. The government money in the economy is 200 MUC. Currency deposit ratio for the economy is estimated to be 0.2 and reserve ratio imposed by the central bank is 4 percent. If foreign exchange reserves of the country decline by 500 MUC, what would happen to the money supply?

- (a) Decline by 2,000 MUC
- (b) Increase by 2,000 MUC
- (c) Decline by 2,500 MUC
- (d) Increase by 2,500 MUC
- (e) Decline by 1,480 MUC.

(2 marks)

58. The targeted growth rate in real GDP of an economy for the year 2009 is 7%. The incremental capital output ratio (ICOR) is estimated to be 4 and gross domestic savings as a proportion of GDP for the year is expected to be 8%. What amount of external financing is required to achieve the expected growth rate in GDP?

- (a) 8%
- (b) 12%
- (c) 20%
- (d) 25%
- (e) 32%.

(2 marks)

59. Consider the following information:

Particulars	MUC
Factor income received by domestic residents from business sector	1,500
Factor income received by domestic residents from foreigners	60
Gross investment	600
Retained earnings	75
Net indirect taxes	180
Corporate profit taxes	110
Personal income taxes	300
Net factor income from abroad	-15
Dividends	300

National Income (NI) of the economy is

- (a) 1,690 MUC
- (b) 1,745 MUC
- (c) 1,780 MUC
- (d) 1,735 MUC
- (e) 2,350 MUC.

(2 marks)

60. The consumption function for a two sector economy $C = 1,000 + 0.5Y$ and investment is an autonomous component. If equilibrium income is 4,800 MUC, what is the investment?

- (a) 800 MUC
- (b) 1,400 MUC
- (c) 1,900 MUC
- (d) 3,800 MUC
- (e) 7,200 MUC.

(1 mark)

61. Total cost function of a firm is given as:

$$TC = 2,400 + 200Q - 9Q^2 + 0.25Q^3$$

What is the average fixed cost at the output level when the marginal cost is minimum?

- (a) Rs.150
- (b) Rs.160
- (c) Rs.200
- (d) Rs.240
- (e) Rs.300.

(2 marks)

62. The total utility obtained from the consumption of ice cream for a consumer is given by the equation, $TU = X^{2.5}$. If the price of ice cream is given as Rs. 67.5 per unit, the consumer maximizes his utility by consuming how many units of ice cream?

- (a) 5 units
- (b) 7 units
- (c) 9 units
- (d) 11 units
- (e) 12 units.

(2 marks)

63. The demand function for good A for Mr. Shankar is given as follows:

$$Q_x = 6,750 - 12P_A + 4P_B + 0.25Y$$

Where Y = income of Mr. Shankar which is Rs. 15,000.

P_A = price of good A which is Rs.150 per kg.

P_B = price of good B which is Rs.90 per kg.

What is the income elasticity of demand for good A?

- (a) 0.232
- (b) 0.334
- (c) 0.414
- (d) 0.151
- (e) 0.632.

(1 mark)

64. Alpha Ltd., has a monopoly in producing a product X. The demand function for this product is estimated as $Q = 75 - P$. The total cost function is $TC = 25Q$. What is the profit?

- (a) Rs.400
- (b) Rs.625
- (c) Rs.725
- (d) Rs.600
- (e) Rs.450.

(2 marks)

65. In an economy the high powered money is 500 MUC. The currency deposit ratio is estimated to be 0.40 and the reserve ratio is 10%. If foreign exchange assets with the central bank increases by 20 MUC, what is the new reserve ratio so that the money supply remains at the previous level?

- (a) 8%
- (b) 10%
- (c) 11%
- (d) 12%
- (e) 16%.

(2 marks)

66. Consider the following BoP data pertaining to an economy:

Particulars	MUC
Export of services	2,27,750
Import of services	1,57,500
Government loans to foreign countries	3,325
Government loans from foreign countries	2,100
Direct investment abroad	2,275
Foreign direct investment in the country	9,800
Short-term loans and investment abroad	22,750
Foreign short-term loans and investments in the country	4,375

The capital account balance for the economy would be

- (a) 14,875 MUC (Cr.)
- (b) 14,875 MUC (Dr.)
- (c) 12,075 MUC (Dr.)
- (d) 12,075 MUC (Cr.)
- (e) 11,025 MUC (Dr.).

(2 marks)

67. The following is the information from national accounts of an economy:

Particulars	MUC
Direct taxes	9,600
Indirect taxes	45,600
Factor income paid abroad	48,000
Factor income received from abroad	36,000
Depreciation	58,000
Surplus	4,200
Subsidies	24,000
National income	1,92,000

The GDP at market prices is

- (a) 89,200 MUC
- (b) 2,83,600 MUC
- (c) 2,59,600 MUC
- (d) 2,19,400 MUC
- (e) 1,92,400 MUC.

(2 marks)

68. In a hypothetical economy, the marginal propensity to consume is 0.75. If marginal propensity to import is 0.10 and the tax rate is 20%, then the value of multiplier will be

- (a) 2.00
- (b) 3.33
- (c) 0.50
- (d) 1.00
- (e) 6.00.

(1 mark)

69. The total cost function of a firm is given as $TC = 500 - 2Q + 3Q^2$. If the current output is 5 units, average variable cost is

- (a) Rs.13
- (b) Rs.12
- (c) Rs.11
- (d) Rs.10
- (e) Rs.14.

(1 mark)

70. A consumer consumes three units of a product. Marginal utilities derived from the three units are Rs.180, Rs.155 and Rs.120, respectively. If the price of the good is Rs.40 per unit, the consumer surplus is

- (a) Rs.335
- (b) Rs.223
- (c) Rs. 40
- (d) Rs.123
- (e) Rs. 78.

(1 mark)

71. The demand and supply functions for a product are:

$$Q_d = 4,200 - 100P$$

$$Q_s = 3,000 + 20P$$

If the government imposes a specific tax of Rs.10 per unit, new equilibrium price of the product would be

- (a) Rs.11.67
- (b) Rs.20.00
- (c) Rs.12.32
- (d) Rs. 8.33
- (e) Rs.18.33.

(2 marks)

72. In the short run a monopolistically competitive firm has the following cost and revenue functions:

$$TC = 15,000 + 30Q - 20Q^2 + Q^3$$

$$TR = 30Q - 2Q^2$$

If the firm is maximizing profits at that level of output, what would be the total cost of the firm?

- (a) Rs.14,208
- (b) Rs.14,218
- (c) Rs.14,209
- (d) Rs.14,228
- (e) Rs.14,108.

(2 marks)

73. The IS function and LM function of an economy are estimated to as $Y = 5,700 + 0.5Y - 100i$ and $Y = 5,200 + 800i$ respectively. The investment function in the economy is given as $I = 1600 - 100i$. If the government spending increases by 100 MUC, the interest rate in the economy would

- (a) Increase from 6.2% to 6.5%
- (b) Increase from 6.2% to 6.8%
- (c) Increase from 6.2% to 6.4%
- (d) Decrease from 6.4% to 6.0%
- (e) Decrease from 6.6% to 6.2%.

(2 marks)

74. The following data pertains to a hypothetical economy:

Particulars	MUC
Private final consumption expenditure	84,000
Fixed capital formation	25,200
Increase in inventories	5,600
Government final consumption expenditure	17,920
Exports	4,480
Imports	1,200
Money supply	27,200

The velocity of money in the economy is

- (a) 1
- (b) 3
- (c) 4
- (d) 5
- (e) 9.

(2 marks)

75. The following data pertains to a hypothetical economy for the year 2009:

Particulars	Million Units of Currency (MUC)
NNP at factor cost	75,000
Depreciation	4,500
GDP at market prices	90,000
Indirect taxes	3,000
Subsidies	750

The net factor income from abroad for the year 2009 was

- (a) 7,500 MUC
- (b) 8,250 MUC
- (c) - 8,250 MUC
- (d) - 7,500 MUC
- (e) 10,200 MUC.

(2 marks)

76. Consider a two sector economy without government sector. If the MPC is 0.50, a decrease in planned investment of 14 MUC will cause aggregate output to decrease by

- (a) 7.00 MUC
- (b) 14.50 MUC
- (c) 28.00 MUC
- (d) 56.00 MUC
- (e) 140.00 MUC.

(1 mark)

77. For a perfectly competitive market supply and demand functions are as follows:

$$Q_s = 1,000P + 500$$

$$Q_d = 5,000 - 500P$$

If variable cost function of a firm is $VC = 212Q - 0.5Q^2$, profit maximizing output for the firm is

- (a) 2,500 units
- (b) 500 units
- (c) 215 units
- (d) 209 units.
- (e) 212 units.

(2 marks)

78. The production function of a firm is given as $Q = 20L^{0.6}K^{0.4}$. If the price of labor is Rs. 40 and the price of capital is Rs. 40, then what is the equation of expansion path of the firm?

- (a) $K = 0.605L$
- (b) $K = 0.644L$
- (c) $K = 0.667L$
- (d) $K = 0.689L$
- (e) $K = 0.699L$.

(2 marks)

79. The demand for a product decreases from 5,000 units to 4,000 units when the price is increased from Rs.50 to Rs.60. What is absolute arc price elasticity of demand for the product when the price is increased from Rs.50 to Rs.60?

- (a) 0.59
- (b) 1.06
- (c) 1.22
- (d) 1.47
- (e) 1.75.

(1 mark)

END OF QUESTION PAPER

Suggested Answers

Economics (CFA520-02): April 2010

	ANSWER	REASON
1.	C	The perfectly competitive firm faces a perfectly elastic, i.e., horizontal, demand curve, not a downward-sloping demand curve.
2.	B	Total fixed cost is equal to the difference between total cost and total variable cost. This is why we can pay little explicit attention to the fixed cost function, since it is already embodied in the total and variable cost functions.
3.	D	The number of buyers in market is a determinant of market demand and has no effect on supply.
4.	B	Both marginal and average costs are equal to each other when average cost is minimum.
5.	D	When there is a current account surplus of Rs.20 billion, the capital account must be in a deficit. (a) is not the answer since the capital account must have a deficit and not a surplus according to the balance of payments identity (b) a current account surplus implies that merchandise exports exceeds imports and hence the net exports and net imports must be Rs.20 billion (c) A current account surplus implies net foreign lending and not borrowing (d) Is the answer. The net foreign acquisitions must amount to Rs.20 billion (e) A current account surplus implies the country is increasing its net holding of foreign assets.
6.	B	The curve that represents the negative relationship between aggregate output and the price level is known as aggregate demand curve.
7.	B	GDP is the value of production, but not sales. If a good is produced during the current year, its value goes into GDP whether it is sold or not. Goods produced during the current year, and not sold, go into inventories and count as investment in the current year.
8.	B	If government spending increases by the same amount as taxes, the effect is expansionary. Because income increase more than government spending due to the presence of the multiplier effect.
9.	A	As oligopolistic industry may include many firms, but it is dominated by just a few of these firms that are large relative to the industry. In order for this to be the case, there must be barriers to entry.
10.	A	His marginal revenue decreases as output increases because the artist must lower the price on all reproductions in order to sell a larger quantity.
11.	B	The price elasticity of demand is defined as the sensitivity or responsiveness of the quantity demanded to a change in price.
12.	B	Cartels are aimed at increasing profits. But for any individual firm the incentive of huge profits by breaking away from or cheating the Cartel and charging a price less than the Cartel price make Cartels unstable. a. Cartels tend to maximize profits by avoiding competition. b. Cartels agreements tend to be unstable because the member firms wants to maximize their profits by cheating on the agreement. c. When the number of firms increases cartel become unstable, but it does not mean that they are unnecessary. d. It is true that cutting output and raising prices benefit each firm in the cartel. But this will not lead to instability of cartels. e. Not all cartels are legally restricted.
13.	D	Monetarists and new classical economists believe that wages and prices are flexible in the short run.
14.	D	Lenders and retirees loses purchasing power if inflation is higher than anticipated and benefits are not indexed.
15.	B	This is consistent with the definition of structural unemployment.

16. D Buying government securities in the open market by the Reserve Bank of India lead to increase the money supply.
17. D Under first degree price discrimination, the monopolist charges the maximum possible price for each unit of output. Hence it is also called perfect price discrimination. Since each unit is charged the maximum possible price, price for each unit will be different, subsequent units are charged less and less price, no consumer surplus exists and profit of the monopolist will also increase.
18. A If a firm minimizes its losses by shutting down in the short run, then at all other output levels, variable cost would exceed total revenue.
19. A Since demand is elastic, the management should expect quantity demanded to fall a relatively large amount due to the rise in price. Options (b), (c), (d) and (e) are incorrect because elasticity refers to the sensitivity of quantity demanded, not demand, to a change in price.
20. B Point B is an inflection point, at which the rate of change changes. The curve peaks at C, therefore, this would be a more appropriate decision at point C. In the range (D), returns to scale are decreasing. From A to B producers experience increasing returns to scale.
- (a) Is not the answer because The marginal product curve peaks at point C
- (b) Is the answer because at point B, total product begins to increase at a decreasing rate
- (c) Is not the answer because at point B, producers might not want to consider building larger capacity
- (d) Is not the answer because returns to scale are not increasing from C to D
- (e) Is not the answer because from A to B, the producer is experiencing increasing returns to scale.
21. C Increased government spending in the absence of increased taxes could be a cause of demand-pull inflation.
22. B the economy moves to full employment in the long run
23. A When the RBI sells bonds, bank reserves and the money supply both fall. Bond dealers and banks have less funds with which to make loans. Thus, the supply of loanable funds falls, which causes the equilibrium interest rate to rise.
24. E A move along the aggregate expenditure function, such as from point c to point b, is the result of an increase in income.
25. E The law of returns to scale explains the behavior of output to changes in all factors of production. (a) Law of Equi- marginal utility states that $MU_X/P_X = MU_Y/P_Y = MU_M$ (b) Law of diminishing marginal utility states that as the consumption of a commodity increases, the marginal utility derived from consuming more of the commodity will eventually decline. (c) Law of diminishing product (d) Law of supply states that other things remaining constant, supply of a commodity is directly proportional to the price of the commodity. (e) Law of returns to scale is the long-run production function, which studies the behavior of output to change in all the inputs. Hence the correct answer is (e).
26. E A perfectly competitive market cannot influence the price of the product they sell.
27. C A ceiling price above equilibrium price will have no effect on the market. The equilibrium price is legal in this case and so equilibrium price and quantity will continue to prevail.
28. C When input prices for a perfectly competitive industry remain constant as the output of the industry expands, it is a case of constant cost industry. In this case the supply curve is horizontal.
- (a) Is not the answer because the industry supply curve is not positively sloped
- (b) Is not the answer because the industry supply curve is not negatively sloped
- (c) Is the answer because the industry supply curve is horizontal
- (d) Is not the answer because the industry supply curve is not vertical
- (e) Is not the answer because the industry supply curve is not rectangular hyperbola.
29. A If one country buys cars from another country, it is recorded in the current account of the balance of payments.
30. E Most of the variation in consumption spending can be explained by changes in disposable income.

31. B According to the Classical Aggregate Supply model, at the level of full employment, the aggregate supply curve is a vertical straight line.
32. C In the business cycles theory, after a business peak or boom, the economy enters contraction stage. The sales of most businesses fall and real GNP of an economy grows at a slow pace. There is a large number of unemployment in the labor market. This phase is otherwise known as recession.
- (a) Is not the answer because the inventory stock increases gradually in recession.
- (b) Is not the answer because business expectation will be pessimistic with cautious decision-making.
- (c) Is the answer because there is an underutilization of existing capacity in the economy.
- (d) Is not the answer because bank credit starts falling in the recession phase of business cycle.
- (e) Is not the answer because there is a decline in the income levels of the people.
33. C a) True. Whenever we make choice, we choose something over the other. Therefore, opportunity cost of the choice is the value of the alternative forgone. b) True. Opportunity cost is defined as the value of the best alternative forgone. c) False. It may not always be possible to express opportunity cost in monetary terms. d) True. In economics, costs include opportunity costs also. e) True. Opportunity cost is defined as the value of the best alternative forgone.
34. D A Tim's Shoe Shine Shop operates in a perfectly competitive market. If its marginal revenue is Rs. 5 per shine, then the market price per shine is Rs.5.
35. C If coffee and tea are substitutes, the cross price elasticity of demand is positive. For example, if the price of coffee rises, the demand for tea rises (and the price of tea rises) as consumers substitute tea for coffee.
36. A Blocked entry are factors which make it hard for new firms to enter the industry. Because of this, the monopolist earns profit.
- (a) Is the answer because in long-run equilibrium the monopolist can make profit because of blocked entry.
- (b) Is not the answer because in long-run equilibrium the monopolist can make profit not because of high prices he charges
- (c) Is not the answer because in long-run equilibrium the monopolist can make profit not because of low long run average costs
- (d) Is not the answer because in long-run equilibrium the monopolist can make profit not because of advertising
- (e) Is not the answer because in long-run equilibrium the monopolist can make profit not because of price discrimination.
37. D A decrease in oil prices shifts the short-run aggregate supply curve to the right.
38. A In the short-run Keynesian model, output would decline as firms cut production to stop the buildup of inventories when aggregate expenditure is less than GDP.
39. A If interest rate increases, planned investment decreases and aggregate expenditure decreases.
40. D The period in the business cycle from a trough to peak is called as expansion.
41. D According to the short-run Phillips curve, inflation is inversely related to unemployment.
42. A The severity of crowding-out effect would be reduced if the Reserve Bank of India (RBI) increases the money supply and at the same time the Government of India increases government spending.

43. A If marginal revenue exceeds marginal cost for any firm, that firm should increase its output. Because any increase in output increases revenue faster than it increases cost, so profits go up. The price should fall a bit as quantity climbs, but that effect is already included in the construction of marginal revenue, so it does not mitigate against this result.
- (a) Is the answer because if a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules require that firm to Increase its output in both perfect and imperfect competition.
- (b) Is not the answer because if a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules does not require that firm to increase its output in perfect but not necessarily in imperfect competition.
- (c) Is not the answer because if a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules does not require that firm to increase its output in imperfect but not necessarily in perfect competition
- (d) Is not the answer because if a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules does not require that firm to decrease its output, in both perfect and imperfect competition
- (e) Is not the answer because if a firm's marginal revenue exceeds its marginal cost, profit-maximizing rules does not require that firm to increase price, not output, in both perfect and imperfect competition.
44. C If the investment demand curve is vertical, monetary policy is effective, but fiscal policy is ineffective. If the investment demand curve is vertical a rise in interest rates has no effect on demand.
45. D A homogeneous product is not a characteristic of monopolistic competition.
46. C As the price of calculators rises, the quantity supplied of calculators increases, ceteris paribus. Option (c) is a formal definition of the law of supply.
47. A As the price of milk increases, the demand for coffee will decrease because the more expensive milk makes consuming the coffee more expensive, since milk and coffee are complementary goods and are consumed together. The demand curve for coffee would shift to the left, so that equilibrium price and equilibrium quantity both decrease.
48. A The locus of points of tangency between set of isoquants and the isocost lines indicates the best possible input combination. (a)Expansion path is the locus of points of tangency between set of isoquants and isocost lines. (b)Labor capital ratio does not indicate the best possible factor input combination. (c)Capital-output ratio is the ratio that represents the amount of units of capital that are needed to produce a certain level of output. (d) Marginal product of factor is the change in output due to small change in the factor, keeping all other factors constant. (e) Total product is the amount of total amount of output produced by given amount of variable factor, keeping quantity of other factors constant. Hence the correct answer is (a).
49. A Economic growth refers to situation where increased productive capabilities of an economy are made possible by either an increasing resource base or technological advance. A country, thus, can achieve economic growth through:
- Improvement in technology
 - Natural resources
 - Capital
 - Human resources
- Change in tastes and preferences of consumers only affect the demand of an individual good or services, and it does not increase the production capabilities of an economy.
50. C Rapid economic growth, full employment, and stable prices are the three most important macroeconomic goals.
51. E Personal Income = National Income – Undistributed corporate profits – corporate tax + Transfer payments
- National Income = GNP at market price – Depreciation – Indirect taxes + Subsidies
- = 8,500– 950 – 865+ 100 = 6,785
- ∴ Personal Income = 6,785– 140 – 375+ 210 = 6,480 MUC

52. B Finance ratio = Total Issues/National Income
Given National Income = 60,000
Total Issues = 60,000 × 0.20 = 12,000 MUC.
53. B $AP_L = 60L - L^2$
 $TP_L = AP_L \times L = 60L^2 - L^3$
 TP_L can be maximized when $MP_L = 0$
Therefore, $\partial TP_L / \partial L = 120L - 3L^2 = 0$
 $L(120 - 3L) = 0$
 $L = 0$ or $L = 40$.
 $\therefore$ Output can be maximized by employing 40 labors.
 $\therefore$ Maximum possible $TP_L = 60(40)^2 - (40)^3 = 96,000 - 64,000 = 32,000$ units.
54. A The demand function : $Q_d = 6,50,000 - 45P$
When price is Rs. 5,000 per unit
 $Q_1 = 6,50,000 - 45(5,000)$
 $= 6,50,000 - 2,25,000$
 $= 4,25,000$
When price is Rs. 6,000 per unit
 $Q_2 = 6,50,000 - 45(6,000)$
 $= 6,50,000 - 2,70,000$
 $= 3,80,000$
Arc price elasticity of demand is
$$E_p = \frac{Q_2 - Q_1}{P_2 - P_1} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$
$$= \frac{-45,000}{1,000} \times \frac{11,000}{8,05,000}$$
$$= -0.615.$$
55. B $MR = AR \left\{ 1 - \frac{1}{e_p} \right\}$
 $\therefore MR = 900 \left\{ 1 - \frac{1}{6} \right\}$ since $AR = \text{price}$
 $= 900 (5/6) = \text{Rs. } 750.$
56. C A firm earns normal profits, when $AR = AC$
 $P = 3Q - 25.$
 $AC = 5$
 $3Q - 25 = 5$
 $3Q = 30$
 $Q = 30/3 = 10$ units.
57. C $M_s = \text{High-powered money} \times \{(1 + C_u)/(C_u + r)\}$; where High powered money = monetary liabilities of the central bank + government money.
 $\Delta M_s = \Delta H. m$
 $M = (1 + C_u) / (C_u + r)$
 $= (1 + 0.2) / (0.2 + 0.04) = 5$
When foreign exchange reserves of the country decline by Rs. 500 MUC, the monetary liabilities also fall by 500 MUC. Thus, money supply decline by $5 \times 500 = 2500$ MUC.

58. C Required savings to achieve the target growth rate
 $= ICOR \times \text{Targeted growth rate} = 4 \times 7 = 28\%$
 Required savings are 28% of GDP
 Domestic savings are 8% of GDP
 Required external financing are $(28 - 8) = 20\%$ of GDP.
59. B National income (NI) = Factor income received by domestic residents from business sector +
 Factor income received by domestic residents from foreigners + corporate profit taxes + retained
 earnings = $1,500 + 60 + 110 + 75 = 1,745$ MUC.
60. B $Y = C + I$
 $Y = 1000 + 0.5 Y + I$
 $0.5 \times 4800 = 1000 + I$
 $I = 2400 - 1000 = 1400$
61. C $TC = 200Q - 9Q^2 + 0.25Q^3$
 $MC = \frac{\partial TC}{\partial Q} = 200 - 18Q + 0.75Q^2$
 MC is minimum when $\frac{\partial MC}{\partial Q} = 0$
 $\therefore \frac{\partial MC}{\partial Q} = -18 + 1.5Q = 0$
 $Q = 12$
 When the $Q = 12$.
 Given the fixed cost as Rs. 2400. The average fixed cost is $2400 / 12 = \text{Rs. } 200$
62. C A rational consumer would consume upto the point where the Marginal utility = price
 Marginal utility is given by Derivative of total utility i.e. $X^{2.5}$
 Given $2.5X^{1.5} = 67.5$ or $X^{1.5} = 27$ or $X = 9$ units
 Hence the correct answer is (c).
63. C Income elasticity of demand is given as

$$e_y = \frac{\partial Q_A}{\partial Y} \times \frac{Y}{Q_A}$$
 Differentiating the demand function with respect to Y we have

$$\frac{\partial Q_A}{\partial Y} = 0.25$$
 from the demand function we have

$$Q_A = 6750 - 12(150) + 4(90) + 0.25(15000)$$

$$= 6750 - 1800 + 360 + 3750$$

$$= 9060$$

$$e_y = 0.25 \times \frac{15000}{9060}$$

$$= 0.414$$

64. B Demand function of the firm is given as $Q = 75 - P$
- $$P = 75 - Q$$
- $$TR = P \times Q$$
- $$= 75Q - Q^2$$
- $$MR = 75 - 2Q$$
- $$TC = 25Q$$
- $$MC = 25$$
- Profit maximizing output is obtained when $MR = MC$
- $$= 75 - 2Q = 25$$
- $$2Q = 50$$
- $$Q = 25$$
- $$P = 75 - Q$$
- $$= 75 - 25 = 50$$
- $$\text{Profit} = TR - TC$$
- $$TR = P \times Q$$
- $$= 50 \times 25 = 1250$$
- $$TC = 25Q$$
- $$= 25 \times 25 = 625$$
- $$\therefore \text{Profit} = 1250 - 625 = \text{Rs.} 625.$$
65. D Money supply, $M = \frac{1 + Cu}{Cu + r} \times H$
- $$= \frac{1 + 0.40}{0.40 + 0.10} \times 500 = 2.8 \times 500 = 1,400 \text{ MUC}$$
- If there is an additional inflow of 20 MUC of foreign exchange assets, $H = 500 + 20 = 520$
- If money supply is to be maintained at 1,400 MUC,
- $$1,400 = 520 \times \frac{1.40}{(0.40 + r)}$$
- $$\text{or, } 0.40 + r = 520 \times \frac{1.40}{1,400}$$
- $$\text{or, } 0.40 + r = 0.52$$
- $$\text{or, } r = 0.12 = 12\%.$$
66. C Capital account balance: (Government loans from abroad – Government loans to abroad – Direct investment abroad + FDI in the country – Short term loans and investment abroad + Short term loans investments in the country)
- $$= 2,100 - 3,325 - 2,275 + 9,800 - 22,750 + 4,375 = 12,075 \text{ (Dr.)}.$$
67. B National income = NNP at factor cost
- NNP at factor cost
- $$= \text{GDP at market price} - \text{Indirect taxes} + \text{subsidies} + \text{NFIA} - \text{Depreciation}$$
- Or, GDP at market price
- $$= \text{NNP at factor cost} + \text{Indirect taxes} - \text{subsidies} - \text{NFIA} + \text{Depreciation}$$
- $$= 1,92,000 + 45,600 - 24,000 - (-12,000) + 58,000 = 2,83,600 \text{ MUC.}$$
- Where NFIA = (Factor income received from abroad – Factor income paid abroad)
- $$= (36,000 - 48,000) = -12,000 \text{ MUC}$$
68. A Multiplier = $1/(1 - MPC + MPC \times \text{tax rate} + MPI) = 1/(1 - 0.75 + 0.75 \times 0.2 + 0.10) = 2.$

69. A $TC = 500 - 2Q + 3Q^2$
 $AVC = -2 + 3Q$
 $= -2 + 15$
 $= \text{Rs.13.}$
70. A Consumer surplus $= (180 - 40) + (155 - 40) + (120 - 40) = \text{Rs.335.}$
71. A When a specific tax is imposed, the tax burden is shared by the buyers and sellers in the ratio of their opposite elasticities of price i.e. $B : S :: E_s : E_d$.
 $E_d = \partial Q / \partial P \times P / Q = -100 \times P / Q$
 $E_s = \partial Q / \partial P \times P / Q = 20 \times P / Q$
Taking the absolute figures, the ratio of $E_s : E_d :: 20 : 100$
Or, $1 : 5$
Burden on buyers $= 10 \times 1/6 = 1.67$
Equilibrium price before imposition of tax:
 $4200 - 100P = 3000 + 20P$
Or, $120P = 1200$
 $P = 10$.
Equilibrium price after imposition of tax:
 $= 10 + 1.67 = 11.67$.
Alternatively,
When tax is imposed, the supply function becomes $Q_s = 3000 + 20(P - 10)$
Thus, at equilibrium, $3000 + 20(P - 10) = 4200 - 100P$
 $4200 - 3000 + 200 = 120P$
Or, $P = 1400/120 = \text{Rs. 11.67.}$
72. A The profit maximizing output is where $MC = MR$
 $30 - 40Q + 3Q^2 = 30 - 4Q$
Or, $3Q^2 = 36Q$
Or, $Q = 12$
At output of 12 units, total cost
 $= 15000 + 30(12) - 20(12)^2 + (12)^3 = 15000 + 360 - 2880 + 1728 = \text{Rs.14,208.}$
73. C At equilibrium, $IS = LM$
 $Y = 5700 + 0.5Y - 100i$
 $0.5Y = 5700 - 100i$
 $Y = 11400 - 200i$ IS function
 $Y = 5200 + 800i$ LM function
Thus at simultaneous equilibrium,
 $11400 - 200i = 5200 + 800i$
Or, $6200 = 1000i$
Or, $i = 6.2\%$ ✓
When government spending increases by 100, the IS function becomes
 $0.5Y = (5700 + 100) - 100i$
 $0.5Y = 5800 - 100i$
Or, $Y = 11600 - 200i$
Thus, at equilibrium,
 $5200 + 800i = 11600 - 200i$
Or, $1000i = 6400$
Or, $i = 6.4\%$
If the government spending increases by 100 MUC, the interest rate increases from 6.2% to 6.4%.

74. D Velocity of money = Y/M_s
 $Y = C + I + G + E - M$
 $84,000 + 25,200 + 5,600 + 17,920 + 4,480 - 1,200 = 1,36,000$
 $\therefore$ Velocity of money = $1,36,000 / 27,200 = 5$.
75. C Net factor Income from Abroad (NFIA) = NNP at factor cost - NDP at factor cost
 NNP at factor cost = 75,000 MUC
 NDP at factor cost = GDP market price - Depreciation - Indirect taxes + Subsidies
 $= 90,000 - 4,500 - 3,000 + 750 = 83,250$
 $\therefore$ NFIA = $75,000 - 83,250 = -8,250$ MUC
76. C When the MPC is 0.50, the multiplier is 2. A decrease in planned investment of 14 MUC will cause the output to decline by $14 \times 2 = 28$ MUC
 [The multiplier is given by $1 / (1 - MPC) = 1 / 1 - 0.50 = 1 / 0.50 = 2$]
77. D $Q_s = 1,000P + 500$
 $Q_d = 5,000 - 500P$
 $\therefore$ The equilibrium price can be determined by equating
 $Q_s = Q_d$
 $\therefore 1,000P + 500 = 5,000 - 500P$
 or, $1,500P = 4500$
 or, $P = 3 = MR$.
 Variable cost of the firm is given as $212Q - 0.5Q^2$
 $\therefore MC = 212 - Q$
 $\therefore$ Profit maximizing output for the firm is determined where, $MR = MC$
 or, $3 = 212 - Q$
 or, $Q = 212 - 3 = 209$ units.

GDP market price = NNP factor cost + indirect tax + dep - NFIA - subsidies

GDP market price - NNP factor cost - indirect tax - dep + subsidies

$83,000 - \text{NNP factor cost} = - \text{NFIA}$
 $83,000 - 75,000 = - \text{NFIA} \Rightarrow 8,250 = - \text{NFIA}$
 $\therefore 8,250 = \text{NFIA}$

78. C An equation of the expansion path can be determined by first substituting the marginal product functions and input prices into the efficiency condition and then by solving for capital as a function of labor. The corresponding marginal productivities of the production are given as follows:

$$MP_L =$$

$$\begin{aligned}\frac{\partial Q}{\partial L} &= 20 \times 0.6 L^{0.6-1} K^{0.4} \\ &= 12 L^{-0.4} K^{0.4}\end{aligned}$$

Similarly,

$$MP_K =$$

$$\begin{aligned}\frac{\partial Q}{\partial K} &= 20 \times 0.4 L^{0.6} K^{0.4-1} \\ &= 8 L^{0.6} K^{-0.6}\end{aligned}$$

Substituting these value in the efficiency conditions we have

$$\begin{aligned}\frac{12 L^{-0.4} K^{0.4}}{8 L^{0.6} K^{-0.6}} &= \frac{40}{40} \\ \text{or } 12 L^{-0.4} K^{0.4} &= 8 L^{0.6} K^{-0.6}\end{aligned}$$

Solving the above equations we have

$$\frac{K^{0.4}}{K^{-0.6}} = \frac{8 L^{0.6}}{12 L^{-0.4}}$$

$$K = \frac{8}{12} L$$

$$K = 0.667 L$$

79. C
$$ep = \frac{4000-5000}{60-50} \times \frac{50+60}{5000+4000} = \frac{11}{9}$$

$$Ep = 1.22$$

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