

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

21st March 2018

Subject CT7 – Business Economics

Time allowed: Three Hours (10.30 to 13.30 Hours.)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

- 1. Please read the instructions inside the cover page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception.*
- 2. Mark allocations are shown in brackets.*
- 3. Attempt all questions, beginning your answer to each question on a separate sheet. However, answers to objective type questions could be written on the same sheet.*
- 4. Please check if you have received complete Question Paper and no page is missing. If so kindly get new set of Question Paper from the Invigilator.*

AT THE END OF THE EXAMINATION

Please return your answer book and this question paper to the supervisor separately. You are not allowed to carry the question paper in any form with you.

Q. 1) Consider the following demand and supply curve of a company producing tennis balls:

$$Q_d = 200 - P$$

$$Q_s = P - 35$$

Where;

Q_d = Quantity demanded

Q_s = Quantity supplied

P is the price of tennis ball

What is the equilibrium price of the tennis ball and what happens if the price of tennis ball rises above that equilibrium price?

- A.** Equilibrium Price is 117.5 and if the price rises above equilibrium price then a surplus of supply over demand will arise. This will lead to drop in price which will increase the quantity demanded and reduce the quantity supplied.
- B.** Equilibrium Price is 82.5 and if the price rises above equilibrium price then a deficit of supply over demand will arise. This will lead to drop in price which will increase the quantity demanded and reduce the quantity supplied.
- C.** Equilibrium Price is 117.5 and if the price rises above equilibrium price then a surplus of supply over demand will arise. This will lead to rise in price which will increase the quantity demanded and reduce the quantity supplied.
- D.** Equilibrium Price is 82.5 and if the price rises above equilibrium price then a surplus of supply over demand will arise. This will lead to drop in price which will increase the quantity demanded and reduce the quantity supplied. **[1.5]**

Q. 2) The price of steel per ton increased from Rs. 100 to Rs. 120 and the quantity demanded (in tons) reduced from 1000 to 900. What is the Price Elasticity of Demand using 'average' method (rounded to two decimal place):

- A.** -0.50
- B.** -0.58
- C.** -0.67
- D.** +0.58 **[1.5]**

Q. 3) The price elasticity of demand and supply for a good is relatively inelastic. Which one of the following is true if the Government increases the tax rate from 10% to 15%:

- A.** Tax revenue of the Government will fall
- B.** Tax revenue of the Government will increase
- C.** Level of subsidy will increase
- D.** None of the above **[1.5]**

Q. 4) Which of the following factor of production is likely to be classified as fixed?

- A.** Salary of IT personnel who is hired on contract basis requiring one week's notice
- B.** Agent selling insurance product for the Company
- C.** Salary of Actuary employed by the Company
- D.** Cost of the printer to print the policy document **[1.5]**

- Q. 5)** A Private Equity firm ABC Ltd. is faced with two investment options. Option A can generate revenue to Rs 10 million each year for certain. Option B can generate revenue of Rs 5 million, Rs 10 million or Rs. 20 million with probability of 0.6, 0.1 and 0.3 respectively. Assuming that the initial capital investment for both the option is same, which of the following statement is TRUE?
- A. ABC ltd. is a risk averse if it chooses Option A
 - B. ABC ltd. is a risk averse if it chooses Option B
 - C. ABC ltd. is a risk loving if it chooses Option A
 - D. The expected return of Option A is higher than Option B
- [1.5]**
- Q. 6)** Which of the following factors affect the demand for a good:
- A. Consumer Income
 - B. Distribution of Income
 - C. Number and price of substitute goods
 - D. All of the above
- [1.5]**
- Q. 7)** Which of the following is a non zero-sum game?
- A. Chess
 - B. Prisoner's Dilemma
 - C. Competition among oligopolists
 - D. None of the above
- [1.5]**
- Q. 8)** Which of the following is an example of strategic behavior?
- A. In order to avoid losing market share firms usually increase their advertising expenditure
 - B. A firm adopts the pricing behavior of a dominant firm under the assumption that other firms will do likewise.
 - C. Excess capacity building is used as a measure to deter competitors from entering the market
 - D. All of the above
- [1.5]**
- Q. 9)** Which of the following statements is TRUE about perfect competition:
- A. Productive efficiency is achieved in the short run and the long run
 - B. Productive efficiency is achieved in the long run but not in the short run
 - C. Allocative efficiency is achieved in the short run and the long run
 - D. Allocative efficiency is achieved in the long run but not in the short run
- [1.5]**
- Q. 10)** The statement that average variable cost equals marginal cost is:
- A. False
 - B. Always True
 - C. True if marginal cost are constant at all output levels
 - D. True if fixed costs are zero
- [1.5]**

- Q. 11)** Average physical product (APP) rises as long as
- A. The marginal physical product (MPP) is less than APP
 - B. MPP is greater than APP
 - C. MPP is equal to APP
 - D. Total physical product is rising
- [1.5]**
- Q. 12)** A coffee shop offers discounts to customers based on their cumulative spend at the shop i.e. customers spending more get a larger discount. This is an example of:
- A. First degree price discrimination
 - B. Second degree price discrimination
 - C. Third degree price discrimination
 - D. Transfer pricing
- [1.5]**
- Q. 13)** Which one of the following is an advantage for a country adopting a flexible exchange rate system regime?
- A. It provides certainty for organizations engaged in international trade
 - B. It eliminates transaction costs
 - C. Monetary policy can be used to manage exchange rate
 - D. It reduces the need for central banks to keep reserves of foreign exchange
- [1.5]**
- Q. 14)** An insurance contract is considered feasible if:
- A. The insurer is more risk-averse with respect to the insured event than the policyholder.
 - B. The insurer is less risk-averse with respect to the insured event than the policyholder.
 - C. The insurer is risk-neutral with respect to the insured event
 - D. The policyholder is risk-neutral with respect to the insured event
- [1.5]**
- Q. 15)** Which of the following is a correct statement – Generally free market leads to:
- A. Social efficiency
 - B. Equity
 - C. Both A & B
 - D. None of the above
- [1.5]**
- Q. 16)** Which of the following is not a possible cause of the depreciation of the currency?
- A. A rise in demand for import
 - B. A rise in inflation rate in domestic economy
 - C. A rise in domestic interest rate
 - D. A rise in investment prospects abroad
- [1.5]**
- Q. 17)** The ----- the marginal propensity to withdraw (or the ----- the marginal propensity to consume domestically produced goods) ----- the multiplier.
- A. Lower, lower, lower
 - B. Higher, lower, lower
 - C. Lower, higher, lower
 - D. Higher, lower, higher
- [1.5]**

- Q. 18)** Which of the following is an aim of supply side policy
- I.** To shift the aggregate supply curve upwards
 - II.** To shift the aggregate supply curve to the right
 - III.** To reduce cost push inflation
- A.** I & II
 - B.** I only
 - C.** II & III
 - D.** I & III
- [1.5]**
- Q. 19)** Which of the following is recorded as a plus in the balance of payments accounts of the country?
- A.** A fall in country's foreign exchange reserves
 - B.** The purchase of foreign shares by residents of the country
 - C.** Lending by the country to the rest of the world
 - D.** A grant to an overseas country for investment
- [1.5]**
- Q. 20)** In order to solve the Prisoner's dilemma type of problem for a firm, which of the following legal restrictions would help:
- A.** Ban on advertisement of products
 - B.** Making collusion illegal for oligopolists
 - C.** A law that prevents a cartel from enforcing rules against cheating
 - D.** All of the above
- [1.5]**
- Q. 21)** The Government in a country named Newland has proposed to provide subsidy of \$5 per unit to producers of Battery Operated Cars, in order to boost the consumption of such cars, thereby reducing the level of pollution.
- The demand and supply function for Battery Operated Cars is as below:
 $Q_d = 120 - 3P$
 $Q_s = \frac{3}{4}P$
Where;
Qd is the quantity demanded
Qs is the quantity supplied
P is the price per car
- As a result of above what is the expected cost of the subsidy :
- A.** 135
 - B.** 120
 - C.** 100
 - D.** 165
- [1.5]**
- Q. 22)** Which one of the following statement is not true in respect of Nash Equilibrium?
- A.** Without collusion neither firm can increase its payoff given the other firm's strategy
 - B.** Nash equilibria is a subset of Dominant equilibria
 - C.** There is no incentive for any firm to change its position
 - D.** Nash equilibrium is not necessarily the outcome that is "best" for all firms
- [1.5]**

- Q. 23)** Which of the following is not a form of Horizontal Strategic alliance?
- A. Entering into Joint Venture
 - B. Franchise
 - C. Licensing
 - D. Consortium
- [1.5]**
- Q. 24)** Which of the following statement is false?
- A. First degree price discrimination may enable the firm to produce at socially efficient output level
 - B. At socially efficient output level , price is lower than marginal cost
 - C. At socially efficient output level, tax is equal to marginal external cost
 - D. Perfect markets are socially efficient
- [1.5]**
- Q. 25)** A Government wishing to increase aggregate demand might use which of the following measures to increase aggregate demand:
- A. Selling Government securities in open market
 - B. Allowing interest rates to fall
 - C. Increasing tax on consumer goods
 - D. Reducing social security benefits
- [1.5]**
- Q. 26)** The only market structure in which there is significant interdependence among the firms with regard to their pricing and output decision is:
- A. Monopoly
 - B. Monopolistic Competition
 - C. Perfect Competition
 - D. Oligopoly
- [1.5]**
- Q. 27)** If the capital output ratio is 5, the proportion of national income that is invested is 7% , the country's growth rate is:
- A. 140%
 - B. 1.40%
 - C. 5%
 - D. 35%
- [1.5]**
- Q. 28)** A Phillips curve shows trade-off between:
- A. Higher inflation and lower unemployment
 - B. Lower inflation and lower employment
 - C. Influence of supply side policy on inflation and unemployment
 - D. Influence of fiscal policy on inflation and unemployment
- [1.5]**

Q. 29) Which of the following statement is true?

Collusion is more likely if:

- A. There are many firms
- B. The firms have similar average costs
- C. All firms are equal in market participation
- D. The firms different production methods

[1.5]

Q. 30) The following table gives country A's import and export position for following years:

	FY	FY-1
Export	140	100
Import	70	100

What can be said about country's terms of trade index?

- A. It has increased by 100%
- B. It has decreased by 100%
- C. It has increased by 200%
- D. It has increased by 20%

[1.5]

Q. 31) 'Friends Life' the only life insurance company operating in a country called "Savings Only" has been historically selling mostly unit-linked products. The Company now wants to expand its product offering and plan to offer Term Assurance Products to the population of 'Savings Only':

- i) Define the market structure in which Friends Life is operating (0.5)
- ii) State the main feature of such market structure (3)
- iii) State the reason why Friends Life is willing to offer Term Assurance Product in addition to its existing unit-linked product offering (4)

The life insurance Company wishes to use advertising for promotion of Term Assurance product.

- iv) State the various medium of advertisement that the company could use to promote the product. (2.5)
- v) Describe the reason why the Life Insurance wants to use Advertisement and the various benefits it hopes to achieve from advertisement. (4)

[14]

Q. 32) A leading car manufacturer Company X plans to merge with another large car manufacturer Company Y. The management of Company X believed that post merger the Company's share price will increase due to the synergistic (potential financial benefit) effect of the deal, thereby resulting in value creation for the shareholders.

- i) State the various synergistic effect that Company X is anticipating (2)

Within one year after the completion of the merger, the stock price of Company X fell down by 20%.

- ii) Discuss the various reasons why this would have happened (5)
[7]
- Q. 33)** i) Explain the labour market model (4)
- ii) Define equilibrium and disequilibrium unemployment and state the reasons for the same (4)
[8]
- Q. 34)** The Government of a country named 'Peaceland' had decided to put a minimum price floor of \$18 per kilogram on the cotton produce.
Below is the supply and demand function of Cotton in Peaceland:
 $Q_d = 20 - P$
 $Q_s = P - 10$
 Where;
 Q_d is the quantity demanded
 Q_s is the quantity supplied
 P is the price of cotton in \$ per kilogram
- i) Calculate the equilibrium price of cotton and hence the quantity demanded using labeled diagram, assuming there are no minimum price floors. (2)
- ii) Using labeled diagram, illustrate the effect of minimum floor price on the quantity demanded and quantity supplied. (3)
- iii) Discuss the reason why the Government of Peaceland would set such minimum floor price. (1)
- iv) What are the issues that could arise in future from such decision? (1)
[7]
- Q. 35)** i) Draw the Keynesian 45degree diagram showing equilibrium national income. (2)
- ii) Explain how equilibrium national income is restored if economy is not initially at equilibrium. (2)
- iii) Explain why different countries have different multipliers. (3)
- iv) The marginal propensity to save is 0.4 and the Government decides to increase the public spending by 50 million. According to Keynesian analysis what is likely to be the total change in national income resulting from this increased Government expenditure. (2)
[9]
- Q. 36)** i) Explain why Government tries to avoid fluctuations in price of its domestic currency. How the Government can maintain its value in short and long term? (5)
- ii) Explain with reasons how the Government could use economic measures to promote health insurance and increase penetration of health insurance in the country. (5)
[10]
