

# INSTITUTE OF ACTUARIES OF INDIA

## EXAMINATIONS

12<sup>th</sup> November 2010

Subject CT7 – Business Economics

Time allowed: Three Hours (10.00 to 13.00 Hrs)

Total Marks: 100

### *INSTRUCTIONS TO THE CANDIDATES*

- 1) *Please read the instructions on the front 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) *In addition to this paper you will be provided with graph paper, if required.*

**AT THE END OF THE EXAMINATION**

**Please return your answer book and this question paper to the supervisor separately.**

- Q. 1)** Merit goods are characterized by:
- A. Non-rivalry and non-excludability
  - B. Undervalued private benefits
  - C. Undervalued private costs
  - D. Overvalued external costs
- [1.5]**
- Q. 2)** Which of the following is not associated with market failure?
- A. Private cost may not be equal to social cost and private benefit may not be equal to social benefit
  - B. Product differentiation
  - C. Uneducated people are able to appreciate the technical configuration of many products available in the market
  - D. Large number of buyers and sellers
- [1.5]**
- Q. 3)** Suppose marginal cost of a commodity is Rs. 125 and marginal social cost is Rs. 80. In order to promote social efficiency government should impose/grant:
- A. A tax of Rs. 45 on this commodity.
  - B. A subsidy of Rs. 45 on this commodity
  - C. A tax of Rs. 80 on this commodity
  - D. A subsidy of Rs. 125 on this commodity
- [1.5]**
- Q. 4)** Which of the following does not justify government intervention in the market?
- A. Collusive tendering
  - B. Some firms restrict their production
  - C. Firm's supply is over-responsive to demand for its product
  - D. Firms constantly work for technical development
- [1.5]**
- Q. 5)** Which of the following is market-oriented supply-side policy?
- A. More efficient use of public sector resources to cut government expenditure
  - B. Reduction in tax rates to encourage people to work more enthusiastically
  - C. Enforcing secret ballots on workers' strike proposals
  - D. All of above
- [1.5]**
- Q. 6)** Government can facilitate increase in output/supply for a given level of prices in the economy by:
- A. Increasing the size of public sector
  - B. Reducing the rates of corporation taxes
  - C. Increasing the power of labor unions
  - D. Increased regulations
- [1.5]**

- Q. 7)** Which of the following does not fit into the rules that WTO members have to follow?
- A. If a nation benefits from a tariff reduction it should reduce its own tariff
  - B. A country can ask for permission to retaliate against any trade barriers erected against it
  - C. A country can raise existing tariffs only when deemed essential for welfare of poor people
  - D. A country cannot impose quota [1.5]
- Q. 8)** In a free foreign exchange market for Indian Rupee vis-à-vis US Dollar, if both demand and supply curve for Indian Rupee shifts to right, Indian Rupee will:
- A. Depreciate
  - B. Appreciate
  - C. Neither depreciate nor appreciate
  - D. Any of the above may occur [1.5]
- Q. 9)** Gross value added at basis prices is generally higher than net value added at basic prices in developing economies due to:
- A. Inflation
  - B. Taxes
  - C. Subsidies
  - D. Depreciation of capital [1.5]
- Q. 10)** The situation of an economy producing less than its potential output is reflected from existence of:
- A. Frictional unemployment
  - B. Structural unemployment
  - C. Technological unemployment
  - D. All of above [1.5]
- Q. 11)** Suppose base year for Consumer Price Index (CPI) in a country is year 2005. CPI increased from 120 in October, 2006 to 132 in November, 2006. Rate of inflation in November, 2006 is:
- A. 10%
  - B. 6%
  - C. 32%
  - D. 20% [1.5]

- Q. 12)** Suppose national income is currently at equilibrium. An increase in the value of the domestic currency may lead to (other things remaining equal):
- A. Decrease in equilibrium price level and increase in equilibrium national income
  - B. Increase in equilibrium price level and decrease in equilibrium national income
  - C. Decrease in equilibrium price level and national income
  - D. Increase in equilibrium price level and national income
- [1.5]**
- Q. 13)** Under free foreign exchange rate system, a decrease in the money supply, other things remaining equal, will lead to:
- A. Increase in the domestic exchange rate
  - B. Decrease in demand for exports
  - C. Deterioration in the balance of payments
  - D. All of above
- [1.5]**
- Q. 14)** Assuming  $MV=PY$ , for a given level of expected increase in price level and real GDP, the required increase in money (broad money) supply will increase:
- A. If velocity of circulation increases
  - B. If velocity of circulation decreases
  - C. If real GDP is expected to increase at higher rate than the increase in price level
  - D. If real GDP is expected to increase at lower rate than the increase in price level
- [1.5]**
- Q. 15)** Assuming Keynesian model income determination, suppose full-employment level of GDP is Rs. 120 million. Current equilibrium level of income of this economy is Rs. 100 million. Marginal propensity to consume domestically produced goods is 0.80 in this economy. Recessionary gap in this economy is:
- A. Rs. 20 million
  - B. Rs. 25 million
  - C. Rs. 4 million
  - D. More than 20 million
- [1.5]**
- Q. 16)** If Marginal Benefit exceeds Marginal Cost then:
- A. Firms would increase output indefinitely
  - B. Firms would decrease output
  - C. Firms would increase output by one unit
  - D. Firms would increase output until Marginal Benefit is equal to Marginal cost
- [1.5]**

- Q. 17)** If Aggregate demand equals the total level of spending in the economy and Aggregate supply equals the total amount of output (ie goods and services) in the Economy then :
- I. Demand Side Policies directly affect the firm's costs
  - II. Supply side Policies directly affect the firm's sales
  - III. Demand Side policies directly affect the firm's sales
  - IV. Supply side policies directly affect the firm's costs
- A. Only I
  - B. Only III and IV
  - C. Only III
  - D. Only I & II
- [1.5]**
- Q. 18)** Destabilising speculation:
- A. Magnifies price changes
  - B. Reduces price changes
  - C. Destabilizes market equilibrium and requires government intervention
  - D. Affects only the quantity demanded and not the quantity supplied
- [1.5]**
- Q. 19)** The Cross Price Elasticity of Demand is typically high in :
- A. Monopolistic Competition
  - B. Perfect Competition
  - C. Oligopoly
  - D. All
- [1.5]**
- Q. 20)** Lower Marginal Costs shall result in :
- A. Lower Price Elasticity of Supply
  - B. Higher Price Elasticity of Demand
  - C. Higher Price Elasticity of Supply
  - D. Higher Output being produced
- [1.5]**
- Q. 21)** Adverse Selection means
- A. The insurance companies selects adverse risks
  - B. Customers are not honest while declaring their health status
  - C. Bad risks get attracted compared to good risks
  - D. Policyholders behave less carefully because they know they're enjoying insurance cover.
- [1.5]**

- Q. 22)** Diminishing marginal utility of income means:
- I. People are risk averse with regard to their wealth.
  - II. They don't like to acquire more wealth
  - III. Marginal utility of income is positive
  - IV. Marginal Utility of Income is Convex
- A. Only III & IV
  - B. Only I & IV
  - C. Only I & III
  - D. Only II & III
- [1.5]**
- Q. 23)** Nash Equilibrium may exist
- A. Only for zero sum games
  - B. When there is no collusion between firms
  - C. Only for non-zero sum games
  - D. Only if it is also a dominant equilibrium
- [1.5]**
- Q. 24)** Which of the following are true:
- I. Economies of Scale occurs when there is constant returns to scale
  - II. Economies of Scale occurs typically in capital intensive industries
  - III. Economies of Scale occurs when there is increasing returns to scale
  - IV. Economies of Scale occurs when there is factor costs are constant
- A. I and II
  - B. I,II and III
  - C. II,III and IV
  - D. I,II and IV
- [1.5]**
- Q. 25)** Minimum Efficient Scale represents:
- A. The output level where labour efficiency is minimum
  - B. The output level beyond which further economies of scale cannot be achieved
  - C. The output level where diminishing marginal returns to variable factor begins
  - D. The output level where short run marginal costs equal short run average costs
- [1.5]**
- Q. 26)** Which of the following is not a natural barrier to entry in the case of a Monopoly?
- A. The Minimum Efficient Scale is large enough to serve the market
  - B. Specialized marketing skills
  - C. Patents acquired over a production process
  - D. Cheapest Financing
- [1.5]**

- Q. 27)** Productive Efficiency is achieved :
- A. when firms produce at minimum average cost
  - B. when firms produce at minimum marginal cost
  - C. when firms produce at minimum total cost
  - D. when firms produce with minimum capital
- [1.5]**
- Q. 28)** If a firm has “reserve capacity” , then :
- A. Average Cost would be constant between certain output levels
  - B. Average Cost would equal Marginal Cost
  - C. Marginal Cost would be constant between certain output levels
  - D. Average Variable Cost would be constant between certain output levels
- [1.5]**
- Q. 29)** Countervailing Power in the context of competition is where:
- A. One firm can combat another firms product strategy in a Monopolistic framework
  - B. One firm can combat another firms product strategy in a Oligopolistic framework
  - C. Powerful buyers can prevent the price being pushed up in a oligopolistic/Monopolistic market
  - D. Government restrictions on output levels of firms operating in the market
- [1.5]**
- Q. 30)** Firms in which of the following market produce at Social Optimum levels :
- A. Monopoly
  - B. Oligopoly
  - C. Perfect competition
  - D. Monopolistic
- [1.5]**
- Q. 31)** Suppose a small country’s population is 0.10 million, out of which 0.04 million people are in their childhood or old age and hence are not able/willing to work. Current average real wage rate is Rs. 8,000 per month. Forty-five thousand people have got employment at this wage rate. Remaining people are willing to work but they want higher wage rate. An average real wage rate of Rs. 10,000 per month will attract additional 10,000 people. But employers will engage only 35,000 workers at this wage rate.
- A. Calculate the extent of equilibrium level of unemployment in terms of number of persons. (1)
  - B. Calculate the extent of disequilibrium unemployment in terms of number of persons. What are the key causes of such type of unemployment? (3)
- [4]**

- Q. 32)** It is generally accepted that imposition of indirect tax on a commodity reduces welfare. Assuming that there is no market failure (no externality); social welfare is maximized in the pre-tax situation; and the value of consumer surplus, producer surplus and government surplus are measured equivalently in terms of their value to the society answer following questions.
- A. With the help of suitable diagram show the loss (if any) of consumer surplus, producer surplus, and social welfare as a result of imposition of indirect tax on cigarette. (4)
- B. If government spends the proceeds from this tax on maintaining law & order in the society which gives equal satisfaction to consumers as smoking gives, what will be loss in consumer surplus from imposition of indirect tax? Show in the same diagram. (1)
- C. If law & order gives same satisfaction to the producer as the profit (total revenue minus total cost) from sale of cigarettes, what will be loss in producer surplus from imposition of indirect tax? Show in the same diagram. (1)
- [6]
- Q. 33)** What are advantages and disadvantages of free-floating exchange rate? What measures/methods could be adopted to control the disadvantages of free-floating exchange rate? (5)
- Q. 34)** Government of a country is confident that the aggregate supply will respond with negligible time lag and concludes that demand deficiency is the real hurdle in growth. In order to boost aggregate demand, it takes (through the central bank) various measures to increase the money supply.
- A. Elaborate the monetary transmission mechanism through which increased money supply is expected to lead to increase in output. (2)
- B. Assuming that the government's confidence in supply response is genuine, what are the key issues that may hamper the positive impact on aggregate demand? (4)
- [6]
- Q. 35)** How is an expansionary fiscal policy expected to increase the level of aggregate demand in the economy? What are the practical problems that may reduce the magnitude of impact of such policy? (6)

- Q. 36)** Compare Monopolistic competition with Perfect Competition and Monopoly [7]
- Q. 37)** Explain the following :
- A. The law of demand (1)
  - B. Income and Substitution Effect (2)
  - C. How the law of demand reflects the Income and Substitution effects (2)
- [5]
- Q. 38)** Briefly explain the following
- A. Horizontal Strategic alliance (2)
  - B. Vertical Strategic alliance (2)
  - C. Networks (1)
- [5]
- Q. 39) A.** Assume production {P} is affected only by two factors – Capital {C} and Labor {L}. comment whether there is increasing, decreasing or constant returns to scale for the following functions, assuming increase of 20% in all the relevant factors:
- i.  $P=0.3*(CL)^2$
  - ii.  $P=aC+b^2L$
  - iii.  $P=C^{0.5}L^{0.25}$
- (7)
- B.** If  $P = C^xL^y$  then find conditions on x and y so that the function exhibits decreasing returns to each factor, but increasing returns to scale. Assume 20% increase in the relevant factors (4)
- [11]

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