INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

20th March 2017

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. <u>However, answers to objective type questions could be written on the same sheet</u>.*

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) The Government recently hiked the price of domestic LPG Gas. As a result of which a lot of consumers have switched to Kerosene oil for their domestic cooking. Mention the effect that has resulted in reduced demand for LPG gas.

A. Income Effect
B. Substitution effect
C. Supply effect
D. Both (A) and (B) **[1.5]**

Q. 2) If rise in the price of Good X causes the demand curve for Good Y to shift to the left, then

A. Good X and Good Y are complimentary
B. Good X and Good Y are substitute
C. Good X and Good Y are inferior good
D. Good X is inferior good and Good Y is normal good **[1.5]**

Q. 3) Demand and Supply function for a cotton industry are given by the following equations:
$Q_d = 300 - 12P$
$Q_s = 6P$
Where P is the price in rupees (Rs).
In order to boost the cotton industry recently the Government announced a reduction in taxes imposed on supplier by Rs. 10 per unit. Following this announcement the new equilibrium market price is:

A. 16.66
B. 13.33
C. 20
D. 17.22 **[1.5]**

Q. 4) The price of Good X was recently increased from Rs. 8 to 10, following which the demand for the good reduced by 6% from its original demand of 100 units of good. The price elasticity of demand using the 'average' method for Good X is

A. -0.27835
B. -0.24
C. -0.31915
D. 0.31915 **[1.5]**

Q. 5) Following goods tend to have negative cross-price elasticity of demand:

A. Substitute goods
B. Complimentary goods
C. Luxury goods
D. Inferior goods **[1.5]**

Q. 6) Following are NOT the possible causes of Diseconomies of scale

A. The container principle
B. Co-ordination and communication
C. Industrial relations
D. Alienation and poor motivation of workforce **[1.5]**

Q. 7) The CEO of a monopoly firm engaged in telecom business is provided with the following information about the company:

Marginal revenue = Rs. 15
Marginal Cost = Rs. 18
Average Cost = Rs 20
Average Revenue = Rs 25

In order to maximize the profit, the firm should:

A. Reduce price and increase output
B. Reduce price and reduce output
C. Increase price and increase output
D. Increase price and reduce output. **[1.5]**

Q. 8) Which of the following statements is FALSE?

A. Rational decision making for firms involves weighing up the benefits of total revenue against the additional cost of production.
B. Speculators use futures and forward contracts to try and make money based on their expectation of what the actual spot prices are likely to be in the future.
C. Stabilising speculation occurs when speculators believe that the price change that has occurred is temporary.
D. Both (A) and (C) **[1.5]**

Q. 9) Profit maximising level for a Cartel is when:

A. MC > MR
B. MC = MR
C. MC < MR
D. MC > AR **[1.5]**

Q. 10) Mr X is an owner of a private equity firm. He is presented with two investment options both of which requires same initial capital investment.
Option 1: This project will generate revenue of Rs 1,00,000 per year for the firm
Option 2: This project can generate revenue of Rs 33,000 or Rs 1,00,000 or Rs 2,00,500 per year with probability of 0.3, 0.5, 0.2 respectively.
Which of the following statements is TRUE:

A. If Mr X is risk-loving he will chose Option 1
B. The expected return for Option 2 is lower than Option 1
C. If Mr X is risk averse he will chose Option 1 over Option 2
D. If Mr X is risk averse he will chose Option 2 over Option 1 **[1.5]**

Q. 11) Below data related to a firm is given to you:

Output	Marginal revenue from the next unit	Marginal Cost of the next unit	Average Revenue	Average Cost
25	19	10	31	22
26	15	6	29	20
27	11	2	27	18
28	7	25	25	16
29	3	37	23	17

What is the supernormal profit at the profit-maximising output?

A. 252
B. 174
C. 243
D. -504 **[1.5]**

Q. 12) Following are NOT the key assumptions of long-run average cost curves

A. Factor prices are given
B. Firms choose the cost-minimising combination of factors for each output level
C. Land and labour resources are given
D. Technology and factor quality are given **[1.5]**

Q. 13) In which market structure firms are price takers?

A. Perfect competition
B. Oligopoly
C. Monopoly
D. Duopoly **[1.5]**

Q. 14) The following pay-off matrix shows the profit resulting from various combination of low-price and high-price strategies of two firms, Alpha and Beta respectively:

		Beta	
		High Price	Low Price
Alpha	High Price	(100, 100)	(5, 175)
	Low Price	(175, 5)	(15, 15)

Considering above, the dominant strategy for each firm, Alpha and Beta would be:

A. Alpha adopts High Price strategy and Beta adopts Low price strategy
B. Alpha adopts High Price strategy and Beta adopts High price strategy
C. Alpha adopts Low Price strategy and Beta adopts High price strategy
D. Alpha adopts Low Price strategy and Beta adopts Low price strategy **[1.5]**

Q. 15) A Cola Company recently ran a huge advertisement campaign for its flagship cola brand, as a result of which it has created huge brand loyalty among the consumers. The effect of this has led to:

A. Making the product's demand highly price-elastic
B. Reduced price and reduced demand for cola
C. Making the product's demand less price-elastic
D. Increasing the number of perceived substitute goods **[1.5]**

Q. 16) Producer surplus is defined as

A. Total utility – Total expenditure
B. Total revenue – Total production cost
C. Total revenue – Total variable cost
D. Total revenue – Total variable cost - Taxes **[1.5]**

Q. 17) In a Country named Freeland the marginal propensity to consume domestically produced goods is 0.7 and the exchange rate of local currency to US dollar is 70. The local currency of Freeland is called Zeta. Socialist Government of Freeland decides to increase the public spending by 100 million Zeta. As per Keynesian analysis, the total change in national income due to the above policy of the Government will be.

A. 70 million Zeta
B. 1 million US Dollar
C. 333.33 million Zeta
D. 142.86 million Zeta **[1.5]**

Q. 18) Which of the following is NOT a market-orientated supply-side policy?

A. Measures to reduce the power of trade unions
B. Introduction of public-private partnerships
C. Removal of barriers to trade and capital movements
D. Provision of infrastructure **[1.5]**

Q. 19) Country A has decided to nationalise all banks to safeguard banking industry from increasing Non-Performing Assets. This is an example of

A. Interventionist supply-side Policy
B. Market-orientated supply-side Policy.
C. Merger Policy
D. Competition Policy **[1.5]**

Q. 20) Which of the following could explain why a country's aggregate demand curve might shift inwards to the left?

A. An appreciation of the domestic currency
B. A decrease in interest rates
C. A rise in Government expenditure
D. An increase in business confidence **[1.5]**

Q. 21) You are given the following data for an economy:

	Million
Consumer expenditure (including taxes on products)	120
Investment	60
Government expenditure (including transfer payments)	70
Exports	40
Imports	20
Taxes on products (Indirect taxes)	10
Capital depreciation	20
Transfer payments	10
Net Income from abroad	10

The value of the economy's Gross National Income at market prices is:

A. 250 million.
B. 260 million.
C. 270 million.
D. 280 million. **[1.5]**

Q. 22) The monetary base is increased when:

A. The central bank prints more money.
B. The Government buys Treasury bills from the public.
C. A citizen buys a newly issued corporate bond.
D. A firm obtains an overdraft from a bank. **[1.5]**

Q. 23) Which one of the following is most likely to be the best method of reducing long term structural unemployment?

A. Expansionary fiscal policy.
B. Increasing the money supply.
C. A reduction in trade union powers.
D. Better education and training. **[1.5]**

Q. 24) Which of the following does NOT form part of a country's Gross Domestic Product?

A. Company profits
B. Investment expenditure
C. Net income from abroad
D. Salaries of Parliamentarians. **[1.5]**

Q. 25) In a certain economy in order to correct externalities, Government has decided to introduce a subsidy equal to the marginal external benefit in order to increase production. Which of the below will be true for this Economy.

A. Marginal Social Cost > Marginal Cost
B. Marginal Social Cost < Marginal Cost
C. Marginal Social Benefit < Marginal Benefit
D. Marginal Social Benefit > Marginal Benefit **[1.5]**

Q. 26) In a Country named Greenland, the total population is 200 million. The recent census data shows that there are 126 million actively employed and 15 million people are either out of work or looking for employment. Assuming no other data is available, the unemployment rate (rounded to two decimal place) of Greenland is:

A. 10.64%
B. 7.50%
C. 11.90%
D. None of the above **[1.5]**

Q. 27) Assume two countries, with the same level of technology and resources, do not presently trade. In Country X one unit of labour and one unit of capital can produce 20 units of Computers or 15 units of Bikes. In Country Y one unit of labour and one unit of capital can produce 50 units of Computers or 25 units of Bikes

Which of the following is TRUE?

A. Country Y has a comparative advantage in the production of Computers.
B. Country X has an absolute advantage in the production of Bikes.
C. Country X has an absolute advantage in the production of Computers.
D. Country Y has a comparative advantage in the production of Bikes. **[1.5]**

Q. 28 The adoption of a policy to reduce the Government's budget deficit will involve:

A. An increase in aggregate demand and a reduction in real output.
B. An increase in aggregate demand and an increase in real output.
C. A reduction in aggregate demand and a reduction in real output.
D. A reduction in aggregate demand and an increase in real output. **[1.5]**

Q. 29) If a country experiences high domestic inflation compared to its trading partners with a fixed exchange rate then the effect of the inflation will be to

A. Decrease the country's imports.
B. Increase the country's exports.
C. Shift the country's currency supply curve in the foreign exchange market to the right requiring central bank purchases of the domestic currency to maintain the fixed exchange rate.
D. Shift the demand curve for the country's foreign exchange to the right requiring central bank purchases of the domestic currency to maintain the fixed exchange rate. **[1.5]**

Q. 30) The Central Bank conducts an open market sale of bonds equivalent to 20 million. The commercial banks hold reserves equivalent to 5 per cent of their deposits. What is the maximum that the broad money supply may fall as a result of the open market operation?

A. 1 million
B. 20 million
C. 200 million
D. 400 million. **[1.5]**

Q. 31) **i)** Explain why Governments may wish to avoid fluctuations in the value of a country's currency and how they can maintain its value in the short and long term. (7)

ii) Explain the problems associated with restriction on foreign exchange trading and other methods of restricting the outflow of money. (3)

[10]

Q. 32) Discuss who gains and who loses as markets become continually more globalised. **[4]**

Q. 33) Outline three methods of measuring national income. For each method state the main point that needs to be considered in order to avoid double counting. Why will the answers produced by each of these methods be different? **[4]**

Q. 34) You are given the following table of information relating to the economy of Ekbull Island:

Investment	200
Government spending	150
Exports	200
Imports	0.24Y + 50
Taxation	0.2Y
Saving	–100 + 0.2Yd

Where Y is national income.

i) Calculate the equilibrium level of national income, Y. (2)

ii) Calculate the equilibrium levels of:

a) Imports
b) Saving
c) Consumption (3)

iii) What is the value of the multiplier in this economy? (1)

[6]

Q. 35) You are given the following data on Country E's international transactions for the year 2016 with the rest of the world (ROW):

Exports of goods and services (paid for in cash)	120
Imports of goods and services	140
Interest, profits, dividends and transfers received from ROW	30
Interest, profits, dividends and transfers paid to ROW	20
Export of goods on trade credit	40
Loans received from ROW	30
Statistical error	?
Decrease in official reserves	20

i) Calculate the current account balance. (1)

ii) Calculate the capital account balance. (1)

iii) Calculate the value of the statistical error (make sure you clearly indicate whether it is positive or negative). (1)

iv) Does the country have a freely floating exchange rate? Explain your response. (1)

[4]

Q. 36) **i)** Explain the following terms:

a) Risk (0.5)
b) Uncertainty (0.5)

ii) State four ways in which firms may be able to deal with uncertainty while supplying goods? (2)

[3]

Q. 37) Company XYZ Ltd. is a newly start-up company involved in manufacturing of mobile phones. The Company has consulted you on framing strategies to further enhance its market share. Discuss the four possible market strategies that you would recommend the Company to adopt? **[9]**

Q. 38) **i)** Define Income elasticity of demand for a good? (1)

ii) A Company X which has monopolistic control over the telecom industry in Country ABC has the following demand curve for its product:
$P = 125 - Q^2$
The Company X has a marginal cost of 50 per unit and fixed cost of 200 towards building and network towers.

a) Determine the profit-maximising price and the output for Company X? (2)

b) Calculate the profit at profit maximising level of output (1)

[4]

Q. 39) Currently Mr. X income is Rs. 10,000 annually. The price of Good X is Rs 5, the price of Good Y is Rs 6 and Mr. X has bought 400 units of Good X.
Given price elasticity of demand for Good X = - 2
Cross-price elasticity of demand for Good X with respect to Good Y = + 0.5
Income elasticity of demand for Good X = + 0.6
Using the 'original' formulae, explain, with reference to the definition of the relevant measure of elasticity, what will happen to Mr. X's demand for Good X if:

i) The price of Good X increases to Rs. 5.50 (1)

ii) The price of Good Y decreases to Rs. 4.50 (1)

iii) Mr X's income increases to Rs 12,000 per year. (2)

[4]

Q. 40) Discuss the effect of Price Elasticity of Demand (PED) on Total Sales Revenue of a good, under following scenarios:

- **i)** PED > 1 (0.5)
- **ii)** PED < 1 (0.5)
- **iii)** PED = 0 (0.5)
- **iv)** PED = - ∞ (0.5)

[2]

Q. 41) **i)** List the main assumptions under perfect competition? (2)

ii) Illustrate and discuss the short-term supply curve of a perfectly competitive firm using labelled diagram. (3)

[5]

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