

# INSTITUTE OF ACTUARIES OF INDIA

## EXAMINATIONS

24<sup>th</sup> May 2013

**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. *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.**

- Q. 1)** In case of which of the following goods, will Marginal Revenue be greater than Average Revenue?
- A) Normal good
  - B) Inferior good
  - C) Necessities
  - D) None of the above
- [1.5]**
- Q. 2)** Which of the following is true?
- A) Increase in nominal GDP always results in an increase in real GDP
  - B) Increase in a negative output gap is associated with an increase in the unemployment rate
  - C) Unemployment only imposes a cost upon those who are unemployed
  - D) All economists agree that an increase in aggregate demand will result in an increase in both the price level and real output
- [1.5]**
- Q. 3)** Consider the following information provided for the country, “Economasia” (unit Number of people in millions)
- Employed 177; discouraged workers 2; Unemployed 13; Household workers 20; Students 15; Retirees 19; Disabled 5; Labor force 190; Civilian Population of 16 and above 249.
- Based on this information, the unemployment rate in Economasia is:
- A) 5.3%
  - B) 6.0%
  - C) 6.8%
  - D) 7.9%
- [1.5]**
- Q. 4)** The crowding-out effect refers to:
- A) Low wages leading workers to leave an industry.
  - B) Firms wishing to locate production away from congested areas.
  - C) Public expenditure displacing private expenditure.
  - D) Increased rates of taxation leading to lower total tax revenue.
- [1.5]**
- Q. 5)** Which ONE of the following would cause the value of the multiplier to fall?
- A) A fall in the level of government expenditure.
  - B) A rise in the marginal propensity to consume.
  - C) A fall in business investment.
  - D) A rise in the marginal propensity to save.
- [1.5]**
- Q. 6)** Writing a cheque to purchase a new motor bike is an example of using money primarily as a
- A) unit of account
  - B) standard of value
  - C) medium of exchange
  - D) store of value
- [1.5]**

- Q. 7)** Money is created when
- A) loans are repaid
  - B) the net worth of the banking system is increased
  - C) banks exchange some of the state and local bonds in their portfolio for federal government bonds
  - D) banks make additional loans
- [1.5]**
- Q. 8)** Assume the banking system has no excess reserves and the reserve requirement is 20%. The reserve requirement is then dropped to 10%. As a result of this reduction
- A) the money multiplier will decrease
  - B) bank profitability is likely to decrease
  - C) banks will be forced to accumulate reserves by reducing their lending activity
  - D) the money supply is likely to increase
- [1.5]**
- Q. 9)** Which of the following best explains the negative slope of the short-run Phillips curve?
- A) Short-run aggregate supply increases at the same pace as aggregate demand increases so that inflation and unemployment do not change
  - B) Weak growth in aggregate demand keeps the economy below potential GDP, so unemployment rises but inflation falls
  - C) Aggregate demand grows so quickly that the inflation rate rises as unemployment rises
  - D) Long-run aggregate supply increases fast enough so that inflation falls as unemployment falls
- [1.5]**
- Q. 10)** According to Keynesian model, if planned expenditure exceeds actual expenditure, then
- A) Inflation increases
  - B) Real GDP increases
  - C) Employment increases
  - D) Unplanned inventory investment increases
- [1.5]**
- Q. 11)** If the price of LPG rises by 40% today, what would be the short run impact on output and prices, assuming natural gas is a major resource in an economy
- A) Output decreases and price decreases
  - B) Output increases and price decreases
  - C) Output decreases and price increases
  - D) Output increases and price increases
- [1.5]**

- Q. 12)** Which of the following would be considered as an example of structural unemployment?
- A) Due to poor performance of the Indian Life Insurance Industry, “Mr. Disappointed actuary” was laid off
  - B) “Mr. Aggressive” was fired because of his aggressive attitude with his Boss “Mrs. Cool”
  - C) Due to lack of technical knowledge, “Mr. Outdated” was unable to operate the new system implemented recently
  - D) Though jobs are available, “Mr. Passive” is unable to find an employer with a job opening
- [1.5]**
- Q. 13)** Suppose a new Plasma TV is invented that costs 50% of existing TVs’ and performs as well. Now when GDP is calculated, the production of the same number of TVs’ creates only half as much rupees output - GDP falls!
- A) true, both nominal and real GDP decrease
  - B) false, real GDP should increase because of adjustments for quality
  - C) false, real GDP should increase because of price index adjustments
  - D) false, real GDP will remain unchanged because of price index adjustments
- [1.5]**
- Q. 14)** To produce 2 TVs’, India must forego 10 stoves where as to produce 3 TVs’ Sri Lanka must forego 27 stoves. If the prevailing world price of TVs’ in terms of stoves is
- A) 4, then both Sri Lanka and India should produce TVs’
  - B) 6, then Sri Lanka should produce stoves and India should produce TVs’
  - C) 8, then Sri Lanka should produce TVs’ and India should produce stoves
  - D) 10, then both Sri Lanka and India should produce stoves
- [1.5]**
- Q. 15)** Suppose the Indian Rupee is undervalued, then
- A) India is hurting exporters
  - B) India will have a balance of payments deficit
  - C) India will accumulate reserves of foreign currency
  - D) India will experience downward pressure on its exchange rate
- [1.5]**
- Q. 16)** As the interest rates rise, the demand for money
- A) rises because bond prices fall
  - B) falls because people want more liquid assets
  - C) rises because the rate of return to loaning money is greater
  - D) falls because the opportunity cost of holding money is higher
- [1.5]**
- Q. 17)** If a commodity is scarce, it can be concluded with high degree of certainty that its
- A) use value will be high
  - B) use value will be low
  - C) exchange value will be high
  - D) exchange value will be low
- [1.5]**

- Q. 18)** Demand curve, with price on Y-axis and quantity demanded on X-axis, for which of the following commodity will be a vertical straight line?
- A) Life saving drugs
  - B) Staple food
  - C) Insurance (in case of existing car owners)
  - D) None of the above
- [1.5]**
- Q. 19)** If both the demand curve and supply curves for a product shift to the right:
- A) Equilibrium price will rise
  - B) Equilibrium price will fall
  - C) Equilibrium price will remain the same
  - D) Equilibrium price may rise, fall or remain the same
- [1.5]**
- Q. 20)** Which of the following is a problem for insurance companies?
- A) Adverse selection
  - B) Self selection
  - C) Anti selection
  - D) All of the above
- [1.5]**
- Q. 21)** Which of the following statements best represents 'Bygones principles' pertaining to the short run?
- A) When deciding how much of a good to produce; only historical costs should be considered
  - B) When deciding how much of a good to produce; only fixed costs should be ignored
  - C) When deciding how much of a good to produce; only sunk costs should be ignored
  - D) When deciding how much of a good to produce; only variable costs should be considered
- [1.5]**
- Q. 22)** As per the typical/traditional shapes of total, average and marginal physical product curves, when diminishing marginal returns to variable factor begins,
- A) Average physical product starts declining
  - B) Average physical product becomes negative
  - C) Total physical product starts increasing at decreasing rate
  - D) Total physical product starts decreasing at an increasing rate
- [1.5]**
- Q. 23)** Suppose the expected inflation rate is 8 percent and the unemployment rate is 3 percent. If the inflation rate rises to 10 percent and the expected inflation rate does not change, then
- A) the short-run Phillips curve will shift upward
  - B) the natural unemployment rate will rise
  - C) the short-run Phillips curve will shift downward
  - D) there will be a movement along the short-run Phillips curve
- [1.5]**

- Q. 24)** ‘Shut down point’ corresponds to a price
- A) Below which the firm must shut down the production in the long run
  - B) Below which the firm must shut down the production in the short run
  - C) Above which the firm will certainly earn profit in the short run
  - D) Above which the firm will certainly earn profit in the short run
- [1.5]**
- Q. 25)** Social optimum output level is achieved when,
- A) Price is equal to marginal cost
  - B) Average revenue is equal to marginal cost
  - C) Marginal revenue is equal to marginal cost
  - D) All of the above
- [1.5]**
- Q. 26)** Consider short run equilibrium of a profit making firm under monopolistic competition, with downward-sloping linear demand curve. Which of the following statements is true?
- A) ‘Profit maximizing’ output level is equal to ‘total revenue maximizing’ output level
  - B) ‘Profit maximizing’ output level is lower than ‘total revenue maximizing’ output level
  - C) ‘Profit maximizing’ output level is greater than ‘total revenue maximizing’ output level
  - D) None of the above
- [1.5]**
- Q. 27)** Which of the following is WRONG about definitions of market strategies?
- A) Market penetration – current product to current market
  - B) Product development – new product to current market
  - C) Market development – current product to new market
  - D) Diversification – new product to new market
- [1.5]**
- Q. 28)** Which of the following is a correct statement regarding mergers and takeover?
- A) A horizontal merger (or takeover) involves two firms at the same stage of the two different production processes in the same industry
  - B) A vertical merger involves two firms at same stage of the same production process in the same industry
  - C) A conglomerate merger involves two firms in entirely unrelated industry
  - D) A conglomerate merger involves two firms in closely related industry
- [1.5]**
- Q. 29)** What is the likely shape of ‘average fixed cost’ curve in the long run?
- A) U-shaped
  - B) Inverted U-shaped
  - C) Rectangular hyperbola
  - D) None of the above
- [1.5]**

**Q. 30)** In case of predatory pricing by a firm,

- A) Profit margin is zero
- B) Total revenue is less than total cost
- C) Profit margin is positive but very small
- D) Price is lower than average variable cost

[1.5]

**Q. 31)** What is Globalization? List the drivers of globalization. What are the pros and cons of Globalization?

[7]

**Q. 32)** The production possibilities tables for two countries “Actuaria” and “Economia” are shown in the tables below. Before specialization and trade, Actuaria’s optimal product mix is given by alternative C while optimal production in Economia is alternative J?

***Actuaria Production Possibilities***

Product	A	B	C	D	E
Cars	20	15	10	5	0
Bikes	0	3	6	9	12

***Economia Production Possibilities***

Product	G	H	I	J	K
Cars	32	24	16	8	0
Bikes	0	10	20	30	40

- a) What is Actuaria's opportunity cost ratio for Cars and Bikes? (0.5)
  - b) What is Economia's opportunity cost ratio for Cars and Bikes? (0.5)
  - c) Could these two countries gain through specialization? If so, in what products should they specialize? (1)
  - d) What is the total gain in production that could be achieved through specialization? (1)
  - e) What are the limits on the terms of trade between the two nations? (1)
  - f) Following specialization, suppose Actuaria exports 10 units of Cars to Economia in exchange for 10 units of Bikes. What are the gains from trade for each country? (2)
- [6]

- Q. 33)** Suppose the government's national income and product accounts revealed the following information (in Billion units)

Rents	26	Personal saving	4
Corporate income taxes	28	Net exports	-15
Undistributed corporate profits	17	Dividends	30
Net foreign factor income	12	Transfer payments	33
Consumption of fixed capital (depreciation)	31	Social Security contributions	39
Compensation of employees	462	Taxes on production and imports	22
Corporate profits	75	Personal taxes	71
Interest	29	Proprietors' income	59
Personal consumption expenditures	525	Gross private domestic investment	110
Government purchases	72		

- a) Using the data in the table, verify that the income approach and the expenditure approach yield the same measure of GDP. (2)
- b) Find NDP by making the appropriate adjustment to GDP. (0.5)
- c) Verify that National Income can be found either by making the appropriate adjustments to NDP or by adding up the appropriate components of income and taxes. (1)
- d) Find PI, personal income, by making the appropriate adjustments to NI. (1.5)
- e) Make the appropriate adjustment to PI to find DI, disposable income. (1)
- [6]

- Q. 34)** Suppose that aggregate demand and supply for a hypothetical economy are as shown: (Demand and Supply are in Billion Units)

Amount of real domestic output demanded	Price level (price index)	Amount of real domestic output supplied
100	300	450
200	250	400
300	200	300
400	150	200
500	100	100

- a) Use these sets of data to graph the aggregate demand and aggregate supply curves. What is the equilibrium price level and the equilibrium level of real output in this hypothetical economy? Is the equilibrium real output also necessarily the full- capacity real output? Explain. (3)
- b) Why will a price level of 150 not be an equilibrium price level in this economy? (1)



- c) Suppose that buyers desire to purchase 200 billion of extra real domestic output at each price level. Sketch in the new aggregate demand curve as  $AD_1$ . What factors might cause this change in aggregate demand? What is the new equilibrium price level and level of real output?

(2)  
[6]

- Q. 35)** Mr. Keynesian is the Principal Advisor to “Bank of Economia”.

He advised, “To maximize its profits, the bank should lend money for long durations and accept deposits for short term”.

Validate Mr. Keynesian’s advice and explain the constraints on “Bank of Economia” to implement the same.

[7]

- Q. 36)** A country, Moneteria’s balance-of-payments data for the last year are shown in the table below:

Amounts are in billions of Moners (Currency of “Moneteria”)

Export of Goods	+100
Balance on capital account	– 5
Export of Services	+ 50
Country’s purchases of assets abroad	– 80
Import of Goods	–130
Net transfers	+ 15
Import of Services	– 45
Foreign purchases of Country’s assets	+100
Net investment income	– 5

What is Moneteria’s:

- a) Balance on current account? (1)
- b) Balance on capital and financial account? (1)
- c) Does Moneteria’s balance of payments show a deficit, a surplus, or are its international payments accounts in balance? (1)

[3]

- Q. 37)** Jaspreet, a college student, generally spends his summers working on the university maintenance crew at a wage rate of Rs.60/- per hour for a 40-hour week. Overtime work is always available at an hourly rate of 1.5 times the regular wage rate.

For the coming summer, he has been offered the pizza stand at the college canteen building, which would have to be open 10 hours per day, six days a week. Jaspreet estimates that he can sell 100 pizzas a week at Rs.60/- each. The production cost of each pizza is Rs.20/- and the rent on the stand is Rs.1500/- per week.

Should Jaspreet take the pizza stand? Why or why not?

[7]

- Q. 38)** Amit wants to buy only two commodities, books for his MBA course and a good for personal effect such as towel, mouthwash, razor etc. He has Rs.3000/- in his pocket which he wants to spend all his money on these two commodities. The price of each book is Rs.300/- and the price of each good of personal effect is Rs.400/-.

Given this information, write the equation for Amit's budget constraint. What is the slope of this budget constraint? Can you give some interpretation for this slope?

[5]

- Q. 39)** Rashi estimates the price-quantity relationship for the New Age Palmtop to be:

$P = 50 - 5Q$ , where P is price and Q is quantity

- a) At what quantity of palmtop is demand unitary elastic?
- b) At the current price, 8 units of palmtop are demanded each period. If the objective is to increase the total revenue, should Rashi increase the price of the palmtop or decrease it? Explain.

[8]

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