

1. Sam consumes only two goods X and Y . If X is a Giffen good for Sam, then
 - (a) Y must be a Giffen good for Sam
 - (b) Y must be a normal good for Sam
 - (c) Both (a) and (b) are false
 - (d) Both (a) and (b) are true

2. Mary's demand curve for food is $Q = 10 - 2P$. Her price elasticity of demand for food at price P^* is equal to $-\frac{2}{3}$. Find P^* .
 - (a) 2
 - (b) 4
 - (c) 1
 - (d) None of the above

3. In a country, cigarettes are forbidden, so people trade cigarettes in a black market. The cigarette demand is $Q_D = 12 - P$ and the cigarette supply is $Q_S = 2P$. The government becomes aware of the black market and reinforces the police so that half of the cigarette supply would be seized and destroyed. How does the consumer surplus change between the two situations?
 - (a) Remains the same
 - (b) Decreases by 10
 - (c) Decreases by 14
 - (d) Increases by 8

4. Cournot duopolists face a market demand curve $P = 56 - 2Q$, where Q is total market demand. Each can produce output at a marginal cost of Rs 20 (constant). The equilibrium price and firm quantity are
 - (a) 26, 6
 - (b) 30, 6.5
 - (c) 36, 10
 - (d) 32, 6

8. Two urns, contain red and blue balls. The first urn has 3 red and 7 blue balls, while the second urn has 6 red and 4 blue balls. An urn is selected at random and a ball is drawn from this urn. If the ball is red, the conditional probability that it was drawn from the second urn is

(a) $\frac{1}{2}$

(b) $\frac{3}{10}$

(c) $\frac{2}{3}$

(d) More information is required

9. The probability density function of a random variable x is given as $\frac{1}{x^2}$, where $1 < x < \infty$.

If the set $A = \{x; 1 < x < 2\}$ and the set $B = \{x; 4 < x < 5\}$, the probability $A \cup B$ is

(a) $\frac{1}{20}$

(b) $\frac{9}{20}$

(c) 0

(d) $\frac{11}{20}$

8. Two urns, contain red and blue balls. The first urn has 3 red and 7 blue balls, while the second urn has 6 red and 4 blue balls. An urn is selected at random and a ball is drawn from this urn. If the ball is red, the conditional probability that it was drawn from the second urn is

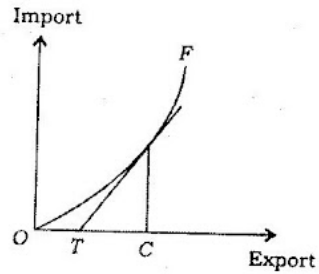
(a) $\frac{1}{2}$

(b) $\frac{3}{10}$

(c) $\frac{2}{3}$

(d) More information is required

10.



For the above offer curve OF , the absolute value of the elasticity of demand for imports is measured by

- (a) OT/TC
 - (b) OC/TC
 - (c) OC/OT
 - (d) CT/OT
11. The necessary and sufficient conditions for the factor price equalisation in the Heckscher-Ohlin model is
- (a) factor intensity reversal
 - (b) incomplete specialization
 - (c) non-constant returns to scale
 - (d) dissimilar production function
12. Restricted trade is superior to free trade for
- (a) a small country
 - (b) a large country
 - (c) any country—small or large
 - (d) Cannot say
13. Quantities of labour embodied per unit of goods X_1 and X_2 in country A are given by 0.3 and 0.7, while the same for country B are given by 0.2 and 0.9. Country A , therefore, enjoys comparative advantage in
- (a) X_1

15. Consider an economy described by the following equations :

$$C = C_0 + 0.8Y_d \quad T = T_0 + 0.25Y \quad Y = C + I + G$$

Where $Y_d = Y - T$ is the disposable income. Given this information, what is the change in the national income if the government reduces autonomous taxes by 50 (i.e., $\Delta T_0 = -50$)?

- (a) Increases by 100
- (b) Decreases by 100
- (c) Increases by 125
- (d) Decreases by 125

16. Consider the following aggregate demand system :

$$M^d = AD - r \quad \frac{M^d}{P} = \frac{M^s}{P} \quad AD = C + I + G \quad C = 1 + 0.5Y \quad I = 1 - 0.5Y$$

Derive the equations for the IS and LM curves.

- (a) $Y = 8 + r - G$; $Y = \frac{4M^s}{P} - 2 - 2G - 6r$
- (b) $Y = 4 + r - 2G$; $Y = \frac{2M^s}{P} + 4 + 2G - 3r$
- (c) $Y = 4 - r + 2G$; $Y = \frac{2M^s}{P} - 4 - 2G + 3r$
- (d) $Y = 2 - r + 4G$; $Y = \frac{M^s}{P} + 2 + G - r$

17. In an open economy the IS curve has a slope that is

- (a) steeper than its counterpart in the closed economy
- (b) flatter than its counterpart in the closed economy
- (c) same as the closed economy
- (d) steeper or flatter than the closed economy depending on whether net exports is positive or negative

18. Consider the basic Solow model for this question. Suppose two countries A and B are identical in all aspects except that A's saving rate is lower than B's. In the long run

20. The probability density function of a random variable y is $\alpha y(1-y)^2$ for y lying between 0 and 1 (α is a constant). Find the probability of y lying between 0.25 and 0.75.

- (a) 0.2234
- (b) 0.0000
- (c) 0.9876
- (d) 0.6875

21. The function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by

$$f(x) = \begin{cases} 1 & \text{if } |x| \leq 1 \\ 2x & \text{if } |x| > 1 \end{cases}$$

is

- (a) convex and continuous on $[-1, \infty)$
- (b) convex and continuous on $[-1, 1]$
- (c) convex and continuous on $(-\infty, 1)$
- (d) None of the above

22. The consumption set

$$C = \{(x, y) \in \mathbb{R}_+^2; x \geq x^0 > 0 \text{ and } y \geq y^0 > 0\}$$

is

- (a) bounded
- (b) convex
- (c) convex and bounded
- (d) Neither convex nor bounded

24. Find the producer surplus for a profit maximising firm with the marginal cost function $MC(q) = 2q + 1$, when price is $p_0 = 10$.

- (a) 22.50
- (b) 25.20
- (c) 20.25
- (d) 22.20

25. The utility function

$$U(x) = \frac{x^\alpha - 1}{\alpha}; \quad 0 < \alpha \leq 1; \quad x \in R_+$$

is

- (a) concave and increasing
- (b) convex and increasing
- (c) concave and decreasing

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ENTRANCE EXAMINATION, 2010

M.A. ECONOMICS

(With Specialization in the World Economy)

[Field of Study Code : EILM (202)]

Time Allowed : 3 hours

Maximum Marks : 100

All the questions have to be answered, although there is an internal choice in Question No. 5. Too lengthy an answer will be penalized.

1. (a) State with *adequate reasoning* if the following statements are True or False :
 - (i) Consider a utility function $U(x_1, x_2) = u(x_1) + x_2$. The income effect on the first commodity (whose quantity is measured by the variable x_1) is zero. 5
 - (ii) Own and cross substitution effects are always negative. 5
- (b) Calculate the Lerner's index when the demand function is given by $q = kp^{-\epsilon}$, $k > 0$, where q and p represent quantity and price respectively.
(Note that Lerner's index is a measure of price margin.) 10
2. Consider an economy characterized by the following relationships :

$$C = 500 + 0.4 * Y_d$$

$$I = 100 + 0.1 * Y - 5000 * i$$

- (b) Now assume that the Central Bank increases the real money supply to 2000. What is the change in the real income and the interest rate under this policy? Provide the economic rationale. 10
3. (a) What is factor intensity reversal? Critically evaluate (with diagrams) the validity of the Heckscher-Ohlin theory of trade in the presence of such reversal. 10
- (b) What are the invisibles in the balance of payments? Examine the mechanism and the implication of the fixed and the flexible exchange rate systems to achieve the equilibrium in the balance of payments. 10
4. (a) (i) Consider the set $A \subset \mathbb{R}^2$ (that is, A is a subset of \mathbb{R}^2) as defined by the following :
- $$A = \{(x, y) \in \mathbb{R}_+^2 : 1 < x < 7, y = x\}$$
- Draw the set A in the xy -plane. Is this set open? Is it bounded? 5
- (ii) Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by
- $$f(x) = \begin{cases} x^2, & x \leq 1 \\ \frac{3}{2}, & x > 1 \end{cases}$$
- Find the limit, $\lim_{x \rightarrow 1} f(x)$. Is this function continuous at $x = 1$? Is it continuous on $[0, 1]$? Is it continuous on $[1, 2]$? 5
- (b) (i) A random variable X has a uniform distribution (rectangular distribution) in the range $(-5, 10)$. Obtain $\Pr\{|X| > 4\}$. 5
- (ii) For a discrete random variable X , it is given that $\Pr(X = 0) = \Pr(X = 2) = p$, and $\Pr(X = 1) = 1 - 2p$, where $0 \leq p \leq \frac{1}{2}$. Find the value of p that maximizes the variance of X . 5
5. Answer any one of the following questions (in not more than 500 words) : 20

- (a) "International cooperation/coordination of policy responses is needed to deal with the problem of global warming and climate change." Discuss.

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ENTRANCE EXAMINATION, 2009

M.A. ECONOMICS

(With Specialization in the World Economy)

[Field of Study Code : EILM (108)]

Time Allowed : 3 hours

Maximum Marks : 100

All the questions are to be answered, although there is an internal choice in Question No. 5

1. Consider a consumer with a utility function

$$U(x_1, x_2) = e^{(x_1 + \ln x_2)^{1/3}}, \quad x_1 \geq 0, x_2 \geq 0$$

- (a) Does the above function satisfy the standard properties of utility function? 6
- (b) Let p_1 and p_2 be the prices of goods 1 and 2 respectively, and m denote the income of the consumer. Solve for the consumer's Marshallian demand functions. 10

(Hint : You could transform the utility function to make it easier to solve)