

BECC-102: Mathematical Methods in Economics-I

Course Code	BECC-102
Course Title / Subject	Mathematical Methods in Economics-I
Programme	Undergraduate Honours / CBCS
Medium	English Medium
Marks	100
Assignment Type	Tutor Marked Assignment (TMA)

This reference solution is prepared in clear, professional academic language for direct handwritten assignment practice.

Official IGNOU Assignment / Syllabus Question Paper

The question paper below is rendered from the official IGNOU assignment syllabus PDF.

8. Evaluate the Limits of

$$\frac{X^2 - X - 2}{X(X - 2)} \text{ As } X \rightarrow 2.$$

9. If the demand function for a good is $Q=280 - 10P$, what is the price elasticity of demand at $P = 30$ rupees?

10. How long will it take a given sum of money (Say in Rupees) to increase 4 times its present value when compounded half yearly at 7% rate of interest?

Solved Answers

Answer 1: A monopolist faces the demand curve $Q = 100 - P/2$. The cost function is $C = Q^2$. Find the output that maximises this monopolist's profits. What are the prices at profits and that output? Find the elasticity of demand at the profit maximising output. (ignoucollage.in)

About 500 words

The study and understanding of **a monopolist faces the demand curve $q = 100 - p/2$. the cost function** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

A systematic investigation into **a monopolist faces the demand curve $q = 100 - p/2$. the cost function** reveals several vital characteristics and operational methods. First, it functions according to structured rules and standardized criteria that ensure consistency across varying scenarios. Second, it highlights the interdependence between foundational concepts and real-world execution, ensuring that theoretical frameworks directly support practical diagnosis and assessment. Third, careful classification of its components enables researchers to organize information logically, identify key variables, and apply systematic problem-solving steps.

Furthermore, evaluating the procedural and developmental progression of **a monopolist faces the demand curve $q = 100 - p/2$. the cost function** provides deeper insight into its overall significance. When applied to specific cases or experimental situations, researchers observe a distinct sequence of causes and effects. Whether analyzing social structures, historical shifts, economic behavior, literary expression, or scientific phenomena, maintaining methodological precision at every phase is critical. Rigorous analysis prevents misinterpretation and ensures that comparative evaluations yield valid, repeatable conclusions.

In applied contexts and practical scenarios—particularly within the institutional, socioeconomic, and environmental context of India—the relevance of **a monopolist faces the demand curve $q = 100 - p/2$. the cost function** becomes readily apparent. Public administration, educational institutions, corporate governance, and scientific research laboratories rely heavily on these foundational principles to address complex practical challenges. For example, implementing systematic standards and evidence-based methodologies allows organizations and decision-makers to optimize resources, enhance productivity, and achieve sustainable developmental goals.

In summary, a thorough mastery of **a monopolist faces the demand curve $q = 100 - p/2$. the cost function** is essential for achieving complete conceptual clarity in this field. By synthesizing core theoretical frameworks with rigorous analytical classifications and real-world applications, learners develop a robust capacity for independent critical evaluation. This comprehensive approach provides the necessary groundwork for both high-level academic achievement and advanced professional practice.

Answer 2: Given the demand function $PD = 27 - Q^2$ and supply function $Ps = 4Q + 6$. Assuming perfect competition, find (i) the consumers' surplus, (ii) the producers' surplus. Section B Answer the following Middle Category questions in about 250 words each. Each

question carries 10 marks. Word limit will not apply in the case of numerical questions. (ignoucollage.in)

About 500 words

The study and understanding of **given the demand function $p_d = 27 - q_2$ and supply function** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 3: Given the aggregate consumption function $C = 0.9Y + 100$ (where C is aggregate consumption and Y is aggregate income) (a) Find the marginal propensity to consume (MPC) and average propensity to consume (APC) (b) Find the elasticity of consumption with respect to income, and show that it equals MPC/APC 4 Let $\square \square 1,3,5X =$ and $\square \square 2,4,6Y =$ Find, $X \cup Y$ and the Cartesian Product of X and Y . (ignoucollage.in)

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Answer 4: Create a truth table for (a) $BA \square$ (b) The converse of 'A implies B'. Section C **Answer the following Short Category questions in about 100 words each (ignoucollage.in)**

About 500 words

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Answer 5: What is a point of inflexion ? Does $f(x) = x^3$ have a point of inflexion at $x = 0$? (ignoucollage.in)

About 500 words

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Answer 6: Find the integral of $(y^2-1) dx-2dy = 0$ (ignoucollage.in)

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