



भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

Mid Semester Exam (Second semester)

Subject: HS 102—Economics (Date: 9th June 2022)

Full marks = 31 + 31 = 62 (2 hour)

Part B: All questions are compulsory:

1. You are an employer seeking to fill a vacant position on an assembly line. Are you more concerned with the average product of labor or the marginal product of labor for the last person hired? Justify your answer (Note: answer will be evaluated on the basis of justification) 2
2. Given the equation, $AR = 200 - 4Q$, where Q is the quantity demanded. Find the point elasticity of demand when $Q = 20$. (Note: AR indicates average revenue) 2
3. Draw average cost, average variable cost, marginal cost, and average fixed cost curves in a single diagram. 2
4. Mentioned the features of the definition of economics given by L. Robbins. 2
5. Highlights the at least four characteristics of the indifference curve with the help of suitable graphs. 2
6. A producer desires to minimize his/her cost of production $C = 2L + 5K$, where L and K are the inputs, subject to the satisfaction of the production function $Q = LK$. Find the optimum combination of L and K in order to minimize cost of production when output is 40. 4
7. Derive the relationship between (Note: Use calculus): 3 + 2 = 5
 - i. Price elasticity of demand, average revenue, and marginal revenue
 - ii. Total cost, marginal cost and average cost
8. Explain the law of diminishing marginal utility with the help of a hypothetical example and graphs. 5
9. Distinguish between short run and long run production function. Discuss the law of variable proportion with the help of suitable diagram. 2 + 5 = 7

$$E = \frac{AR}{MR - AR} = AR \left(1 + \frac{1}{AR} \right) = MR$$