UNIVERSITY OF NORTH BENGAL

B.A./B.Sc. Major 1st Semester Examination, 2023

UECOMAJ11001-ECONOMICS

INTRODUCTORY MICROECONOMICS

Time Allotted: 2 Hours 30 Minutes   Full Marks: 60

The figures in the margin indicate full marks.

GROUP-A

1.   Answer any *four* questions: 3×4 = 12

   (a) Define Producer Surplus.   3

   (b) What do you mean by Returns to Scale?   3

   (c) Distinguish between Fixed Cost and Variable Cost.   3

   (d) The price elasticity of demand is usually negative. Why?   3

   (e) What are Real Numbers?   3

   (f) State the properties of Indifference Curve.   3

GROUP-B

Answer any *four* questions   6×4 = 24

2.   Distinguish between the following: 3+3

   (a) Perfectly elastic demand and perfectly inelastic demand.

   (b) Point and Arc elasticity of demand.

3.   Explain graphically the Law of Diminishing Marginal Utility.   6

4.   Distinguish between short run and long run production function.   6

5.   Average Cost (AC) curve is U-shaped. Explain.   6

6. (a) Suppose the AR is given as $AR = 2Q^2$. Then derive TR and MR. $1\frac{1}{2} + 1\frac{1}{2}$

   (b) Given the TC function $C = Q^3 - 5Q^2 + 12Q + 75$, write the variable cost function. Find the derivative of the variable cost function, and interpret the economic meaning of that derivative.   1+1+1

7. (a) If the domain of the function $y = 5 + 3x$ is the set $\{x \mid 1 \le x \le 9\}$, find the range of the function and express it as a set.   3

   (b) For the function $y = -x^2$, if the domain is the set of all non negative real numbers, what will its range be?   3

GROUP-C

Answer any *two* questions   12×2 = 24

8. (a) Use supply and demand curves to illustrate how each of the following events   2+2+2
   would affect the price of butter and the quantity of butter bought and sold:

   (i) an increase in the price of cheese

   (ii) an increase in the price of milk

   (iii) a decrease in average income levels.

   (b) If the demand curve is a rectangular hyperbola, then what is the value of the price   6
   elasticity of demand?

9. Derive and explain consumer's equilibrium using ordinal utility theory.   12

10. (a) Explain mathematically a homogeneous production function.   6

   (b) Explain graphically the relationship between TR, AR and MR in production   6
   function.

11. Suppose a chair manufacturer is producing in the short run (with its existing plant
   and equipment). The manufacturer has observed the following levels of
   production corresponding to different numbers of workers:

No. of Workers	Number of Chairs
1	10
2	18
3	24
4	28
5	30
6	28
7	25

   (a) Calculate the marginal and average product of labour for this production function.   4

   (b) Does this production function exhibit diminishing returns to labour? Explain.   3

   (c) Explain intuitively what might cause the marginal product of labour to become   5
   negative.

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