B.A. 1st Year, 2nd Semester Examination 2019 (OLD)

Subject: Economics

Paper: Microeconomics 1

(Under 2016 Syllabus)

Time: ...2. Hours   **Full Marks 30....**

Answer question 1 and any *four* from the rest.

1. (a) State and prove Slutsky equation.

    (b) Consider a production function $y = kx^{1/2}$, where k is a positive constant. Derive the cost function.

    (c) Write the characteristic features of a competitive market situation.

    $$3 + 1.5 + 1.5 = 6$$

2. A consumer has a direct utility function of the form $U(x_1, x_2) = u(x_1) + x_2$. Good 1 is a , discrete good; the only possible levels of consumption of good 1 are $x_1 = 0$ and $x_1 = 1$. For convenience, assume that $u(0) = 0$ and $p_2 = 1$.

    (a) What kind of preferences does this consumer have?

    (b) Derive the condition under which the consumer will definitely choose $x_1 = 1$.

    (c) Derive the indirect utility function and the expenditure function.

    $$1 + 3 + 2 = 6$$

3. Consider two individuals A and B with identical preference pattern over two commodities represented by $u(x_1, x_2) = x_1^{0.5}x_2^{0.5}$. Endowment bundles of the individuals are given as $w_A = (10, 20)$ and $w_B = (20, 10)$. The market price of the two commodities are $p_1 = 10$ and $p_2 = 5$ respectively.

    (a) Identify the net seller and net buyer of the commodities at the market.

    (b) Now suppose the price of commodity 1 falls by 2 units. Find out if both the individuals gain in terms of utility. Explain your answer.

    $$3 + 3 = 6$$

4. (a) Show that for a homogeneous production function the expansion path is a straight line through the origin.

    (b) "A firm which possesses an Increasing Return to Scale technology of production and behaves competitively both at the input market and output market can never make a positive profit": Explain.

    $$3 + 3 = 6$$

[Turn over

5. A firm has two plants with cost functions $c_1(y_1) = y_1^2/2$ and $c_2(y_2) = y_2$.
   (a) Derive the total cost function of the firm.
   (b) If the market price of the product is ½, calculate:
   (i)   the total output produced by the firm.
   (ii) the allocation of the total output between the two plants.

   $$3 + (1 + 2) = 6$$

6. If all the firms possess Diminishing Return to Scale technology, show that the long run equilibrium does not exist in a competitive market with free entry and exit of firms.   6

7. (a) State the Weak Axiom of Revealed Preference (WARP).

   (b) The consumption data of an individual is given in the table below:

Situation	p_1	p_2	x_1	x_2
A	1	1	5	35
B	1	2	35	10
C	1	1	10	15
D	3	1	5	15
E	1	2	10	10

   Find out if the individual's behavior is consistent with WARP?

   $$2 + 4 = 6$$