

3 The Long-run production function is given by; $Y = 500 L^{0.8} K^{0.2}$

Where, Y = Output (mt/day), L = Labour (hours/mt) K = Capita (Rs/mt)

- a Calculate Marginal Product of Labour (MP_L) and Marginal Product of Capital (MP_K), if $L=12$ and $K=20$ (05 Marks)
- b Derive the equation for Isoquant and graphically show it by assuming $L= 10, 15, 20, 25, 30$ and $Y = 1000$. (05 Marks)
- c Determine factor intensity and returns to scale of this production function. (05 Marks)
- d Prove that the elasticity of labour is 0.8 and elasticity of capital is 0.2 (05 Marks)

4 The water Economist has estimated short run water responsiveness function for rice farming under major irrigation condition in the Dry Zone of Sri Lanka as follows;

$Y = 7W + 10.1W^2 - W^3$, Where Y = Output (paddy kg /Acre) , W = irrigation Water (Cubic Meter – m^3)

- a Determine three stages of this short run production process and graphically show the result. (08 Marks)
- b Determine rational production stage and what is the maximum and minimum output level of this rational stage. (06 Marks)
- c Determine the range of water level which is representing the low of diminishing marginal returns. (06 Marks)

5 a Graphically explain the deadweight loss of monopolization (10 Marks)

- b "Super normal profit is unachievable target to any organization in the long run under perfect complete market model" Prove this statement using suitable graphs. (10 Marks)

6 Critically examine the following statements;

- a Advertising playing an important role in monopolistic competitive market (07 Marks)
- b Even in long-run monopolist does not optimize limited resources (07 Marks)
- c Third degree price discrimination is practically impossible pricing strategy (06 Marks)

7 Write short note on followings

- a Economic profit and financial profit
- b Giffen goods and inferior goods
- c Economies of scale and diseconomies of scale
- d Price taker and price maker

(05 Marks for each)