Bachelor of Arts Examination, 2017

(1st Year, 2nd Semester)

Economics (Honours)

Microeconomics 1

Time : Two hours　　　　Full Marks : 30

Answer ***all*** questions.

1. Define : Expenditure Function, Indirect Utility Function. State and derive Shephard's lemma and, hence, derive the Slutsky equation in the elasticity form. Use the latter to explain why the proportion of the consumer's budget allocated to a good determines the difference between elasticities the Marshallian and the Hicksian demand functions for a good. (2+3+3+2)

2. A price taking firm's production function is given by $Q = xy^2z$, where Q is the quantity of output, and x, y and z are the quantities of the variable inputs. For any positive output price and positive input prices, explain **in words** why this firm cannot have a profit maximizing output. (5)

3. A consumer's utility function over consumptions of the same good in two periods is given by $u(c_1, c_2) = 10\, c_1 c_2$. The price of the good in period 1 (c_1) is $P_1 > 0$ and the expected price of the good in period 2 (c_2) is $P^e_2 = P_1$. His endowments of the two goods in the two periods are c_1^* and

c_2^* respectively where $c_1^* = c_2^*$. Supposed that he can transfer money across periods through saving or borrowing, and suppose that the borrowing rate r_b is greater than the lending rate $r_1 > 0$. On a diagram, locate his optimal point and explain your answer. (5)

4. A price taking firm is owned by a single person whose Bernoulli utility function form his sole source of income, the profit made by his firm, is $\sqrt{\Pi}$. The price of the good is Rs. 150 with probability 1, but his cost function is $C_1(Q) = Q^2$ with probability 0.5, or $C_2(Q) = 2\,Q^2$ with probability 0.5. Assume that he is an expected utility maximizer. Find his profit maximizing output. (5)

5. Consider the two Bernoulli Utility functions $U(x) = x^{0.5} + 10$ and $u(x) = x + 10$. Explain carefully why they cannot be used to construct Expected Utility functions that represent the same underlying preferences over lotteries. (5)