# BACHELOR OF ARTS EXAMINATION, 2017

(1st Year, 1st Semester)

## ECONOMICS (HONOURS)

## PRINCIPLES OF ECONOMICS – I (OLD)

Time: Two hours | Full Marks: 30

**Answer any 3 questions from Section A (each question carries 5 marks) and any 5 questions from Section B (each question carries 3 marks).**

### SECTION A

1) Explain how the long run average cost curve is the envelope of various short run average cost curves.

2) Explain using the concept of Engel curve how the market demand curve, for a given population and per capita income, might change with changes in the distribution of income.

3) Give the equation for a market demand curve which is associated with a constant price elasticity of demand at all quantities and draw it. Given that an individual has a linear negatively sloping demand curve for a commodity, depict the shift in his demand curve when income rises by 10%, assuming that the income elasticity of demand is one. (2.5 + 2.5 = 5 marks)

4) In a two good world consider the following utility function, $= x + 2y$ , where x denotes the amount consumed of commodity X and y denotes the quantity consumed of commodity Y. Assume the price of X to be Rs. 10 per unit. Draw a demand curve for Y and explain your diagram. How does the income elasticity change when price changes? (3 + 2 = 5 marks)

## SECTION B

5) Distinguish between increasing, constant and returns to scale. Through an isoquant map depict a scenario where if output (a function of capital and labour) is increased through proportionate increases in K and L (standard notation is used), the three stages of increasing, constant and decreasing returns of scale are encountered in the sequence in which these are stated. (1.5 + 1.5 = 3 marks)

6) John is fond of taking an afternoon nap on a holiday. At 2 p.m. on a Sunday winter afternoon he has the following options in regard to his activities for the next two and a half hours (since his friend is visiting him at home at 4:30 p.m., he has to be home to receive him):
   a) Take a two and half hour nap which he values at Rs. 40
   b) Walk 15 minutes to a movie hall to catch a 2 hour movie at 2: 15 p.m. and then walk back home; the maximum price he would be willing to pay for the movie ticket is Rs. 160 but the ticket actually costs Rs. 130 ( assume that the net benefit from walking for 30 minutes is valued at Rs. 7)
   c) Take a 10 minute bus trip to his Professor's house, help him out as a research assistant for two hours and then take the bus back home (there is a bus at 2:05 p.m. which would pick him up in front of his house and take him to his Professor's house and similarly, there is a bus at 4:20 p.m. which would bring him home from his Professor's house; the total waiting time of 10 minutes at the two bus stops yields a net disbenefit of Rs.5 and the bus tickets cost him Rs.10 while the bus journey is associated with a net benefit of Rs. 0); John likes the job of being a research assistant so much that, if he had nothing else to do, he would in fact be willing to pay Rs. 10 per hour to do that job for which his Professor actually pays him at the same rate.

   Which one of the three activities listed above would John choose and why?

7) Suppose output is given by the production function $Q = 6K + L$. In the short run let K be fixed at 2 units. The price of capital is Rs. 2 per unit and the price of labour is Rs. 4 per unit. Given any total output of Q from the

production process, the net output can be reduced to any non-negative level below Q, if the entrepreneur so wishes, through free disposal of the unwanted output. Derive the following curves for net output: average fixed cost, average total cost, average variable cost and marginal cost.

(0.75 * 4 = 3 marks)

8) Comment on the validity of the following statement giving reasons: "All Giffen goods are inferior goods, but all inferior goods are not Giffen goods."

9) Consider a production function $Q = F(K, L)$ where K is fixed in the short run but L can be varied (all notations have their usual meaning). The marginal product of L is always increasing in L. Show the relationship between short run marginal cost and short run average cost.

10) Let the total cost curve of a monopolist be given by $TC = 2Q^2 + 8$. Assume that the inverse demand curve facing him be given by $P = 50 - Q$ (all notations have their usual meaning). Compute the following: profit maximizing price and quantity and total maximized profit. (1+ 1+1 = 3 marks)