SPRING MID SEMESTER EXAMINATION-2019

Subject: Engineering Economics-HS 2002, Semester: 4th

Full Marks: 20   Time: 1.5 Hours

Answer any FOUR questions including question No.1 which is compulsory.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable and <u>all parts of a question</u>
<u>should be answered at one place only.</u>

1. (a) A consumer's budget is Rs 200.He spends it on purchase of Goods X and Y. Prices of X and Y are Rs 40 and Rs 20 per unit respectively. Write the budget equation and draw the budget line.   **(5x1)**

   (b) There are train and bus services between New Delhi and Jaipur. Suppose that the train fare between the two cities comes down. How will this affect demand curve for the bus travel between two countries? Explain your answer.

   (c) A firm demanding 200 units of an input at a price of ₹ 5 per unit demands 100 units less when its price changes. Price elasticity of demand is 2.5. Calculate the price after change.

   (d) Other factors assumed constant, the supply of a food grains increases due to a good harvest. Explain this situation with a diagram.

   (e) Differentiate between GDP and GNP at market price.

2.(i) What is the meaning of elasticity of demand and elasticity of supply? Suppose in the last union budget 2019, the GST (goods and services tax) on a particular commodity (say commodity-A) increased from 5% to 12%. Based on the theory of elasticity of demand and supply, can you justify the following cases with suitable diagrams:

   (a) When the consumer will pay the entire increased tax amount?

   (b) When the producer will pay the entire increased tax amount?

   (c) When the consumer will pay the larger portion and the producer will pay the smaller portion of the increased tax amount?   **[3]**

(ii) Calculate TR, AR and MR   **[2]**

Units sold	10	9	8	7	6	5	4
Price	1	2	3	4	5	6	7

3(i) The government of Selgina is very serious about drugs. Possession of drugs is illegal and is severely penalized. However, a black market exists which the government has failed to dismantle despite serious attempts. Khusenichho Chamling, the health minister, is worried about the situation. In early 2009, a consultant working with health ministry suggested that the government should increase the price of a pack of cigarettes from 200 Selgina dollars (S$) to S$600. A survey conducted in December 2009 suggested that over the year, the quantity

demanded of marijuana decreased from 2,000 kgs per day to just 800 kgs (Marijuana is illegal, but it is considered a "soft drug" and is mostly smoked). Calculate the cross elasticity of demand and tell why has the policy proved so effective. [3]

(ii) What is meant by 'Marginal rate of Substitution'. Explain the concept with a hypothetical schedule. [2]

4(i)The following table shows Thomas's utility from consuming two different food-salad and sausage roll. The price of a bowl of salad is $3 and the price of sausage is $ 2.

Quan (units)	Salad			sausage		
	Total utility(TU)	Marginal utility (MU)	MU per rupee	Total utility(TU)	Marginal utility (MU)	MU per rupee
1			15			20
2			10			10
3			9			6
4			6			5
5			5			4
6			3.33			1

(i)Fill up the above table. [3+2]

(ii)Find the optimum combination of the two commodities he should consume at a budget of $10 and $18.

5. (i)Suppose that Mr. Prabhat got a prize worth Rs. 5,00,000 in B.Tech. final year for securing first position in the university. Now he wants to deposit this amount in the bank as fixed deposit up to 5 years. Find out how much money Mr. Prabhat will receive from the bank after 5 years with an annual compound interest rate of 8%. [3]

(ii)Ram is planning to have an amount of Rs. 50,00,000 after 15 years for Payal's (his daughter) education. Suppose the market interest rate is 6.5% on Recurring Deposit (RD) provided by the commercial banks. If Ram Babu wants to save the money through annual instalments in the RD account, find out how much each instalment amount Ram Babu has to pay to receive Rs. 50,00,000 after 15 years with an annual compound interest rate of 6.5%? [2]

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