



KIIT UNIVERSITY

MID-SEMESTER EXAMINATION-2017

(B.Tech and B.Tech Dual Degree)

6<sup>th</sup> Semester Sub: ENGINEERING ECONOMICS (HS 2002) Branch-IT, CSC, E&I  
Answer any 5 questions including question no. 1 which is compulsory (F.M.-25) Time: 2 hrs

Q1. (a) If you receive \$200 at the end of the 4<sup>th</sup> year at 10% rate of interest, find how much you have deposited now? (1x5)

(b) When the price of a good rises causing the demand for another good to fall, what is the Cross elasticity and relation between the two goods.

(c) Suppose that price of X is \$5 and the price of Y is \$10 and a hypothetical household has \$500 to spend per month on goods X and Y? (i) Sketch the household budget constraint. (ii) If the household splits its income equally between X and Y, show where the household ends up on the budget constraint?

(d) Lina advertises to sell envelop for Rs.4 a dozen and sells 50 dozens. She has raised the price to Rs. 6 and sells 40 dozens. What is the price elasticity of demand (by percentage method)? Assuming that elasticity of demand is constant, how many would she sell if price is Rs. 10 a dozen?

(e) Suppose a consumer is equally satisfied by the following combinations of goods X and Y. What is the Marginal rate of substitution (MRS) between X and Y? Draw an indifference curve for the two goods taking good X along the X-axis.

X	2	4	6	8	10
Y	14	11	8	5	2

Q2. (a) Fill in the missing amounts in the following table.

(3+2)

	% change in price	% change in quantity	Elasticity
Demand for Ben and Jerry's Ice-cream.	+10%	-12%	?
Demand for Broadway theatre tickets in New York	?	-15%	-1.0

Would you agree with Ben and Jerry's move forward with a plan to raise price if the company's only goal is to increase revenue? Explain.

(b) Explain any 2 factors which affect the price elasticity of demand for a product?



Q3.(a) Suppose the income is estimated to increase by 7% while the increase in price is 10%. If the price elasticity of demand is -0.7 and the estimated income elasticity is 1.5, find the net effect on quantity demanded? (3+2)

(b) You deposit Rs.20000 each year for 5 years. Assuming an interest rate of 7%, how much will be your maturity amount at the end of the 5<sup>th</sup> year?

Q4(i) Jim wants to buy some electronic machine which will cost € 1000. If he wants to generate the required amount in 3 years, how much he has to deposit annually at an interest rate of 6% compounded annually? (3+2)

(ii) A woman borrowed \$2000 which has to be repaid at the end of the 3<sup>rd</sup> year at an interest rate of 7%. Find the amount she will have to pay?

Q5 (a) Manoj Jain, the research manager for marketing at the Indica Division of the Tata Motors has specified the following general demand function for Indicas in India:  $Q_c = f(P_c, N, I, P_f, P_g, A, P_i)$  where  $Q_c$  is the quantity demanded of Indicas per year,  $P_c$  is the price of Indicas,  $N$  is the population,  $I$  is the income,  $P_f$  is the price of Maruti automobiles,  $P_g$  is the price of gasoline,  $A$  is the amount for advertising Indicas and  $P_i$  is the credit incentives to purchase Indicas. Indicate whether you expect each independent variable to be directly or inversely related to the quantity demanded of Indicas and explain the reason for your expectation. (3+2)

(b) Samsung Electronics, Nehru Place, has the following demand function for its 165 litre refrigerator. Find the price and quantity at which its total revenue (TR) is maximum.

Demand function:  $P = 5000 - 2Q$  where  $P$  = price per unit and  $Q$  = quantity

Q6 (a) Assume that Mei has \$100 per month to divide between dinners at a Chinese restaurant and nights at Zanzibar, a local pub. Going to Zanzibar costs \$20 and eating at the Chinese restaurant costs \$10. (3+2)

(i) Supposing that Mei spends two nights at Zanzibar and eats 6 times at the Chinese restaurant, draw Mei's budget constraint and show that she can afford this combination of the two commodities.

(ii) Assume that Mei comes into some money and can now spend \$200 per month. Draw her new budget constraint.

(iii) As a result of the increase in income, Mei decides to spend 8 nights at Zanzibar and eat at the Chinese restaurant 4 times. What kind of good is Chinese food here? What kind of good is a night at Zanzibar?

(b) Explain consumer's equilibrium condition with the help of Indifference curve and Budget line. Why the consumer should be at the equilibrium point?

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