MID-SEMESTER EXAMINATION-2020(online)

……. Semester B. Tech

(SUBJECT)

(SUBJECT CODE)

Time: …….. Full Marks: ……..

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words

		[….]
	A shirt company faces the following demand function Q = 40000 – 2P + 2Y where, Q = demand for shirts, P = Price of Shirts and Y = Per capital income of the consumer Presently P = Rs. 2000 and Y = Rs. 10000 Find the price elasticity of demand. Give your opinion about what effect a rise in price would have on the Total Revenue of the company.	[3]
	Given the demand and supply functions as Q = 20000 – 8P (Demand) Q = 8000 + 2P (Supply) Find the price at the equilibrium point. Check that demand and supply are equal at the equilibrium point.	[3]

	KALA,a businessman received the following amounts from his bank for an initial deposit which is compounded annually at the interest rate of 8 percent. Find the initial deposit that KALA made in the bank. End of year — Amount received ($) 1 — 10000 4 — 10000 6 — 10000 8 — 10000 9 — 10000	[4]
3.	(a) A shirt company faces the following demand function $Q = 40000 - 2P + 4Y$ where, Q = Demand for shirts P = Price of shirts Y = per Capital Income Currently P = Rs. 2000 and Y = Rs. 10000 Find the income elasticity of demand. Mention whether this product is inferior or normal. Give your comment on the demand for the shirt when income increases.	[3]
	(b) Given the demand function of a producer as $P = 100 - 4Q$ where P = Price and Q = Quantity. Find the value of price elasticity when Marginal Revenue (MR) is zero.	[3]
	(c) Elvis deposited an equivalent amount of $20000 at the end of each year for 20 years in his account. At the end of 15th year he deposited an additional amount of $12000 in the account. His money was growing at the interest rate of 7 percent compounded per annum. Decide the maturity amount that Elvis would have got from his account.	[4]

4.	(a) JULIA is a home maker in the USA. She sells her handmade chocolate to earn some money. She sells 100 dozen chocolate for $8 a dozen. This is the weekly sales. She increases the price to $12 per dozen and sells 80 dozens. What is the price elasticity of demand? Using this price elasticity value, advise JULIA if she should raise or reduce the price for increasing her Total Revenue (TR).	[3]
	(b) A consumer has the money income of $48. He spends all his income on two goods X and Y. Price of good X (P_X) is $8 and that of good Y ($P_Y$) is $4. (i) Draw a budget line for the consumer (ii) What will be the Marginal Rate of Substitution X for Y (MRS_{XY}) when the consumer is maximizing the utility?	[3]
	(c) LEMON and ZEMON are twin sisters. They have got two separate saving accounts in a bank. LEMON makes equal end of year deposits in her account and it is calculated that she will receive a sum of Rs.2000000 at the end of 20 years. If ZEMON wants to have the same amount in her account at the end of 20 years, what annual deposit she should make at the end of each year for the same time period. Money grows at 10 percent annual compounding.	[4]
5.	(a) After the outbreak of COVID-19 in India it is found that demand for cars has become highly elastic. Market studies indicate that price elasticity for cars stands at 2.4 in the country. Now the income elasticity of demand for cars is +1.5. Price of car decreases by 10 percent and per capita income drops by 30 percent. Assess the effect of decrease in the price of car and per capita income on the demand for car.	[3]
	(b) The supply and demand curves for steel plates are given by the following equations. Q = 2P (Supply) Q = 500 – 3P (Demand) Find the market equilibrium price. If a GST of Rs.10 per unit is imposed on the supplier, find the price that the consumer has to pay now. Is the demand more elastic?	[3]
	(c) Your Parents have taken a study loan of Rs.1000000 from a bank for your higher education at the rate of interest 6 percent compounded annually. They are repaying the loan amount in yearly installments for 20 years. Do you know the yearly installment that your parents are	[4]

	paying to the bank?	
6.	(a) Cross price elasticity between bus and metro train travels in Delhi city is +2.2. Because of the Corona situation, number of passengers in bus travel has fallen. On the other hand to manage the operating expenses, bus union in the city has decided to increase the bus fare by 12 percent. What will be the effect of the bus fare rise on the metro train travels?	[3]
	(b) A consumer has the money income of $45. He spends his entire income on two goods A and B. Price of good A (P_A) is $5 per unit and that of good B (P_B) is $10. The Marginal Utilities (MUs) of the two goods are given in following table. Find the quantity of two goods consumer has to buy when he wants to maximize the utility. Quantity MU_A MU_B 1 100 160 2 80 150 3 60 120 4 50 110	[3]
	(c) Delisha deposited on amount Rs.20000 at the end of first year in her bank account. Her deposit amount increases thereafter with an annual increment of Rs.1000 for the next 11 years. The bank gives an interest rate of 4 percent compounded per annum. Elisha wants to deposit an annual equivalent amount in her account for the same time period so that she will receive the equal compound amount at the end of the deposit period with Delisha. Find the equivalent amount that Elisha has to deposit at the end of each year.	[4]
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