JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA
PGDM / PGDM (M)/ PGDM (SM)
FIRST TRIMESTER (Batch 2021-23)
END-TERM EXAMINATIONS, OCTOBER 2021

Course Name	Managerial Economics		Course Code	ECO20401
Max. Time	2 hours		Max. Marks	40 MM

INSTRUCTIONS: All questions are compulsory.

SECTION I

Q.1. The general linear demand for good X is estimated to be

$$Q^x_d = 1200 - 3P_x - 0.1P_z$$

Where P_z = Rs 300

(a) Calculate the price elasticity of demand of Good X when P_x is Rs 140? Is the demand elastic or inelastic at this price? What would happen to the firm's revenue if it decided to charge a price below Rs 140? **[5 Marks]**

(b) Calculate the cross-price elasticity E_{XR} when P_x is 140. Are the goods X and R- substitutes or complements? Explain **[5 Marks]**

Q.2. ACME Coal paid Rs. 50,000 to lease a railcar (self-propelled railway vehicle designed to transport passengers) from the Reading Railroad. Under the terms of the lease, Rs. 10,000 of this payment is refundable if the railcar is returned within two days of signing the lease. Upon signing the lease and paying Rs 50,000, how large are ACME's fixed costs? One day after signing the lease, ACME realizes that it has no use for the railcar. A farmer has a bumper crop of corn and has offered to sublease the railcar from ACME at a price of Rs. 45,000. Should ACME accept the farmer's offer?   Elucidate **[5 Marks]**

Q.3. Suppose two competitors, Caterpillar Inc. and Deer & Co., each face an important strategic decision concerning whether or not they should boost advertising on new product introductions. Caterpillar can choose either row in the payoff matrix defined below, whereas Deere can choose either column. For Caterpillar, the choice is either "boost advertising" or "hold advertising constant." For Deere, the choices are the same. Notice that neither firm can unilaterally choose a given cell in the profit payoff matrix. The ultimate result of this one-shot, simultaneous-move game depends upon the choices made by both competitors. In this payoff matrix, the first number in each cell is the profit payoff to Caterpillar (in billions); the second number is the profit payoff to Deere (in billions).

(P.T.O)

Caterpillar, Inc.	Deere & Co.		
	Type of Competitive Strategy	Boost Advertising	Hold Advertising Constant
	Boost Advertising	$8 billion; $5 billion	$5 billion; $3 billion
	Hold Advertising Constant	$4 billion; $2 billion	$9 billion; $4 billion

Determine the dominant strategy for Caterpillar Inc. and Deer & Co., if any.   **[5 Marks]**

OR

The Total Cost and demand equations for a firm are as follows:
$$TC = 100 + 5Q^2$$
$$P = 200 - 5Q$$

Calculate the profit maximizing price and output?

SECTION II

Based on the case "Pricing in the Hotel Industry", answer the questions that follow.

Pricing in the hotel Industry

The hotel charges different rates to different customers at the same time (example same day). In the following discussion, we must remember an important fact attending the operation of a hotel, a large portion of the cost of running a hotel is fixed. The variable cost of renting an empty room is relatively small. To paraphrase a general manager: "if I have got a warm body with money standing in front of me and cold sheets upstairs, I want to make a deal. As long as the customer is willing to pay more than my variable cost to clean that room, I am going to make money". Each additional rented room represents incremental revenue. This situation leads to different types of price discrimination practices in the hotel industry.

Often a hotel will have industry several different rates, and the actual rate charged to a particular guest will depend on the bargaining skill of the customer and the knowledge of the innkeeper in estimating the highest price the potential patron is willing to pay. Thus, the revenue of the hotel may be found along the demand curve (if the manager is really proficient at estimating the customer's willingness to pay).

However, the most difficult way of discriminating is to segment the market. The simplest method is to separate leisure travelers from business travelers. The demand of the former is certainly more price elastic because the room price is an important part of the total vacation expense. At the same time, vacation travelers may be willing to make an advance commitment, may stay for a longer period of time, and are more flexible in their arrangements.

The business travelers demand is less price elastic: they are much more inflexible in making their arrangements (they must be in a certain place at a certain time); their commitments often cannot be made far in advance; perhaps most important is that they are in most cases not willing to stay over the weekend when rates are often lowest (the figure below shows the demand curves at possible prices).
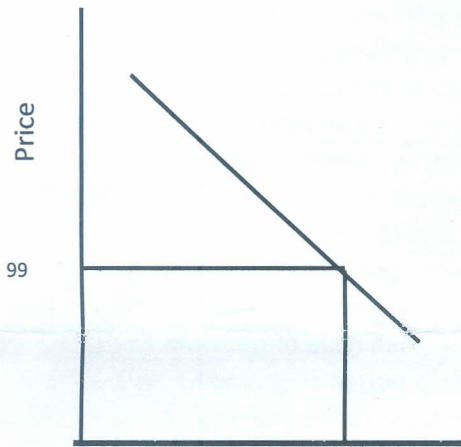
Vacation Travelers
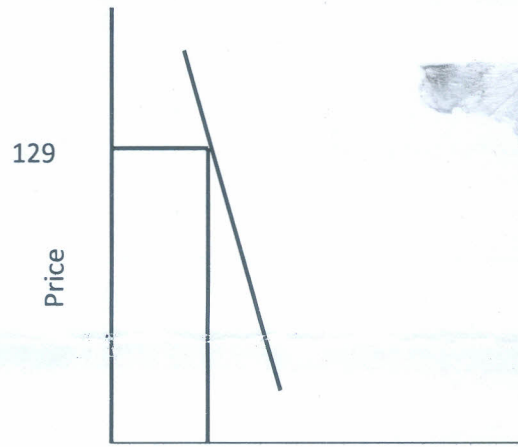
Business Travelers

Q.4. Examine the market structure of hotel industry in India. Validate with suitable arguments.
[5 Marks]

Q.5. Assess the degrees of price discrimination mentioned in the case. **[5 Marks]**

Q.6. Elucidate how the concept of elasticity can be applied in explaining price discrimination in the hotel industry.
[5 Marks]

Q.7. Explain and substantiate the concept of profit contribution as mentioned in the case. Relate it with the role of fixed costs in business decision making. **[5 Marks]**