# Birla Institute of Technology and Science, Pilani <br> I Semester 2022-23 <br> Pricing Analytics MPBA G526 <br> Comprehensive Examination 

Max. Time: 3 Hours
Date: 23-12-2022
Max. Marks: 40
Q. 1 Consider a firm selling jeans. The price- response function for the jeans can be described by $d(\mathrm{p})=10000-100 \mathrm{p}$. Calculate the optimal two-period prices in the cases of $40 \%, 60 \%$ and $80 \%$ cannibalization. What insight do you get from this?
Q. 2 The firm in the above problem decides to evaluate the possibility to introduce multi period pricing for its jeans. Calculate the optimal multi period prices when using two, and three and four periods. Illustrate how the total profit varies with the number of periods used.
Q. 3 Demand for an airline's seats on a short- haul route follows a normal distribution with a mean of 80 and a standard deviation of 20. If the price of an economy fare class Y seat is $\$ 200$ and that of an economy fare class B seat is $\$ 120$. According to Littlewoods's rule, at what level should management set out protections for the business class segment?
Q. 4 Consider the following data from a hotel company relating to a rooms with four fare classes. Demand across each of the fare classes is assumed to follow a normal distribution with the following means and standard deviations:
( $6+2=8$ )

| Class | Fare | Mean | Standard Deviation |
| :--- | :--- | :--- | :--- |
| 1 | 850 | 22.2 | 16.2 |
| 2 | 700 | 15.1 | 8.1 |
| 3 | 600 | 19.7 | 6.4 |
| 4 | 450 | 30.0 | 10.0 |

Q. 5 There are several factors which can influence customer response to price. List and discuss these factors in detail.
Q. 6 What do you understand by the prospect theory of asymmetric evaluation. Discuss with a suitable example.
Q. 7 "Getting pricing right" is important. In order to decide the right price various data points are needed for the organizations. This data can be categorized in two categories; Basic data and Advance data.
a) List and explain one example from each category and discuss their relevance for the organization.
b) There are various sources of price and demand data for the organizations. List and discuss any two sources of the price and demand data.
Q. 8 A company increased the price of one of their products from $\$ 59$ to $\$ 64$. As a result, the sales went down from 12000 units to 11300 units. What is the point elasticity in this case?
Q. 9 Pricing of any product is decided at three levels. It is very important for any decision maker in the organization to considers these three levels before setting prices of any product. Discuss these three levels with suitable examples.
Q. 10 In the mobile phone industry, based on the historical data, it has been observed that decision making of the consumer is dependent on four attributes; Brand, Storage capacity, Front Camera, Battery. In the market there are four brand; Samsung, Vivo, Oppo and Xiomi. For all brands Two options of storage; 64 GB and 128 GB ; Two variation of front camera; $15 \mathrm{MP} \& 20 \mathrm{MP}$; and two options for battery 2000 MAh and 3000 MAh are available. A market researcher conducted a market survey to understand the preferences of consumers for the various combination. (You can assume any customer preferences (on the scale of 1-10) for these combinations). In order to calculate the consumer preferences for these attributes, formulate a conjoint analysis problem based on the given information.

