Max. Time:90 Minutes   Date: 02-11-2022   Max. Marks: 20
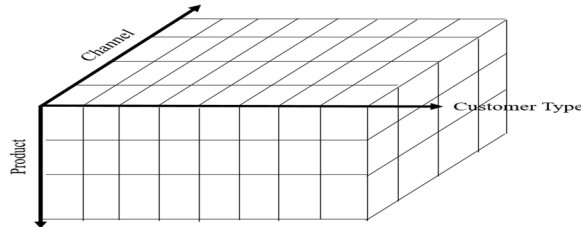
Note: Show all necessary calculations in the answer sheet.

Q. 1 Assume you are running a coffee shop in a university campus. Fill in following PRO cube with 4 different combinations of given three dimensions.   **(2)**

Q. 2 Various approaches to pricing are presented below. Determine what is the actual price set by the firm will be in each case and specify what kind of pricing approach that is used in each case.   **(1+1=2)**

a) The variable unit costs associated with producing an item are $15. The company adds a surcharge equal to 60% of the variable unit costs to determine the price.

b) Three competitors of a company quote the following prices for a widget: A, $15; B, $20; and C, $22. Our price is set such that it is constantly 10% below the average of these three main competitors.

Q. 3 Consider two products: X1 and X2. The price of X1 is $5 and the price of X2 is $10. The consumer has a total budget of $100 per month for these two product.   **(0.5+0.5+1=2)**

a) Formulate the budget constraint.

b) Draw the budget line using the information above.

c) Illustrate how a price change of X1 from $5 to $10 affect the shape of the budget line.

Q. 4 What is price differentiation? Define various degree of price differentiation with suitable examples.

(0.5+1.5=2)

Q.5 Consider the figure given below and answer the following questions: **(0.5+0.5+1+1=3)**

a) If this firm charges a single price of $15, calculate is the total consumer surplus?

b) If the firm charges a single price of $25, calculate is the total consumer surplus?

c) Assume now that firm can exactly identify the customer behind various parts of the price-response. All customers with a reservation price below $25 are students, and all customers with a reservation price higher than this are in the general public. Assume further that the variable unit costs are $5. Calculate the total contribution if the firm (1) charges a single price of $25: 16000 and (2) charges a price of $15 for students and $25 for the general public. What is the impact on the contribution by going from the single to two-price approach?
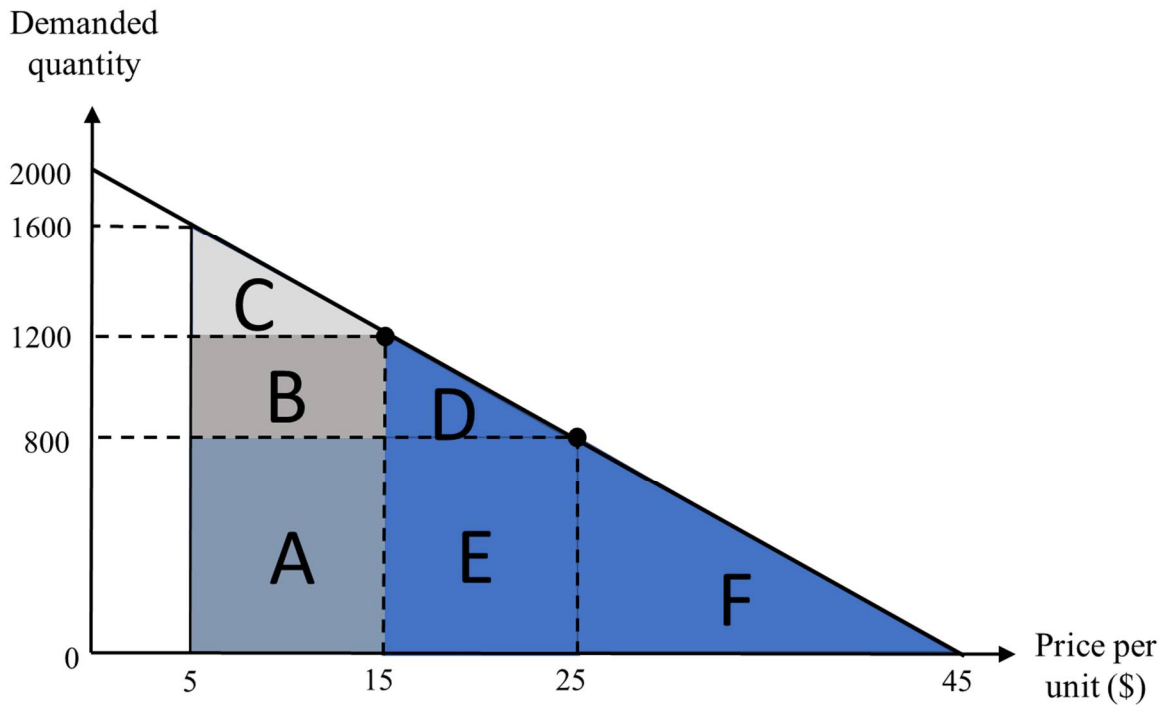
Q. 6 A company is considering investing in a new machine that makes the production process more efficient. The machine costs $15000 and will lower the variable costs by $2. The goal of the investment is to increase production by selling the product $3 cheaper than the current price of $38. What is the percentage break even sales volume change when we know that the company currently is producing and selling 10000 units of the product and has a (current) contribution of $10 per unit sold? **(4)**

Q. 7 A newly established hotel wants to make it simple for its customers by offering only two rates: one weekend rate and a midweek rate. The variable costs associated with making each room ready for new guests are estimated at $10 during midweek days (Monday– Thursday) and $18 for weekend days (Friday– Sunday). The midweek days and weekend days have the following price– response functions: **(5)**

Midweek: d(p) = 1200-8p   Weekend: d(p)= 1200-12p

The hotel has a capacity of 500 rooms in both the midweek period and the weekend period. What is the profit- maximizing single price? What are the profit- maximizing variable prices? What is the percentage increase in total profit from introducing variable pricing? (1+1+1+2)