**Answer Key for March mid Semester 2022**

2a) P1= F/ (1+i) ^n= 26654.82

P2= F/ (1+i) ^n= 31578.116

P= P1+P2= 58232.9565

b) The given statement is refuted. Law of diminishing marginal utility will operate only when consumption is a continuous process. For example, if one sandwich is consumed in the morning and another in the afternoon, the second sandwich may provide equal or higher satisfaction as compared to the first one.

3a) P= 392725.88, Loss= 27274.12

1. i) P = 500 - 0.5Q

TR = 500Q - 0.5Q2

Q=500, P=250

1. MR = 500 - Q

= 500 - 500

= 0

1. When MR +ve, e>1

When MR -ve, e<1

4a) Gradient series

A= 90699.47

F= 1671280.24

b) Q = 10000 – P (D)

Q = 9000+4P(S)

(i) P = 200, Q = 9800

(ii) P = 216

Yes the buyer is less elastic as he is taking a greater portion of the total GST.

(iii) Draw a diagram to demonstrate the effect of GST on the price of the product.

5a) F=50000 (1.08) = 158608.46

A= 158608.46{0.08/ (1.08) ^15-1} = 5847.32

1. (i) Ed= 0.0625, ei= 8

(ii) Increase the price

1. Less than proportionately

6a) **Automatic Car**

a= 125142.8571, b= 30392.8571

Y2025= 520249.9994

Y2030= 672214.2849

**Manual Car**

a= 116285.7142, b= 16464.2857

Y2025= 3, 30,321.4283

Y2030= 4, 12,642.8568

The automatic car can incur greater business collectively at the end of 2030.

b) There will be no change in the budget line. Let us understand this with the help of an example: Suppose, the price of goods 1 rises from Rs 4 to Rs 8 and that of goods 2 rises from Rs 5 to Rs 10. Income also rises from Rs 20 to Rs 40. With double increase in prices and income, intercepts on both X-axis and Y-axis will remain unchanged at 5 units (goods 1) and 4 units (goods 2) respectively. Slope of budget line will also remain the same. Therefore, there will be no change in the budget set and the budget line.