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**BACKLOG MID SEMESTER EXAMINATION-2021**

**Subject: Engineering Economics-HS 2002, Semester: Full Marks: 20 Time: 1 Hour**

***Answer any FOUR questions including question No.1 which is compulsory.***

***The figures in the margin indicate full marks.***

***Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered in one place only.***

1. a) Differentiate between Giffen goods and Inferior goods. [1x5]

b) **QD= 20+4P and QS= 50-2P**

Find out the equilibrium price and quantity from following demand and supply function.

c) Find out the future amount of Rs 5,00,000 which is deposited for next 10 years at 5% rate of interest compounded annually.

d) How influence of fashion can break the operation of Law of Demand?

e) Graphically explain the difference between Expansion of Demand and Increase in Demand.

2. Consider the price of product x and product y and income of the public to express the demand of product x as given below. [3+2]

**Qx = 12000 – 4200Px + 7I + 750Py**

Where,

Qx= DEMAND OF THE PRODUCT X

Px= PRICE OF THE PRODUCT X

I= INCOME OF THE PUBLIC

Py= PRICE OF THE PRODUCT Y

Assume the initial values of Px , I and Py as Rs 11, Rs 12000 and Rs 14 respectively.

**Find the following:**

1. **Price elasticity of Product X and Income elasticity of Product X**
2. **Cross elasticity of the Product X**

3. The demand values of starter motor of particular vehicle in thousands during the past 6 years (2011-2016) are summarized in Table. [3+2]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year (X)** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| **Demand (Y) in thousands** | **60** | **72** | **58** | **90** | **82** | **100** |

1. Fit a linear regression to estimate the demand of starter motor in future.
2. Compute the demand of the starter motor for the year 2021.

[3+2]

4. a) A person is planning for his retired life. He has 10 more years of service. He would like to deposit Rs 30,000 at the end of the first year and thereafter he wishes to deposit Rs 30,000 at the end of the first year and there after he wishes to deposit the same amount with an annual decrease of Rs 2000 for the next 9 years with an interest rate of 18%. Find the total amount at the end of 10th year of the above series.

b) A person invests a sum of Rs 50,000 in a bank at a nominal interest rate of 15% for 20 years. The compounding is quarterly. Find the maturity amount of the deposit after 20 years.

5 a) Explain Consumer’s Equilibrium with the help of Indifference curves and Budget Line. [3+2]

b) Discuss any 4 exceptions to Law of Demand.