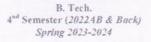## MID SEMETER EXAMINATION, SPRING 2023-2024
Subject: Engineering Economics
Code: HS30101/HS2002

Full Marks: 20

Time: 90 minutes

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. All
parts of a question should be answered at one place only.

Q.1	Answer the following Questions	Marks	CO
a)	Mention the importance of Engineering Economics.	1	CO1
b)	From the following table find out Marginal utility (MU). Explain how MU is related to total utility (TU).	1	CO1

Units of commodity consumed(Q)	TU
1	14
2	24
3	32
4	38
5	42
6	44
7	44
8	40

Q.1		Marks	CO
c)	Define market demand schedule. If there are two consumers in a market having their respective demand functions as $Q_1 = 50 - 5P$ and $Q_2 = 70 - 7P$ (1 and 2 are the two individual consumers), then find out the market demand function.	1	CO1
d)	Explain whether the price of a commodity per unit is the average revenue (AR) of a producer.	1	CO2
e)	Distinguish between compound interest rate and effective interest rate.	1	CO3

Q.2		Marks	CO
a)	Explain how indifference curve is different from the budget line with the help of suitable diagrams.	3	CO2
b)	(i) A company has following demand and supply functions. Find out equilibrium price and quantity. $Q_d = 800 - 10P$	2	CO2

$Q_s = 500 + 20P$

(ii)Find out new equilibrium price and quantity if supply remaining constant demand increases to $Q_d = 1000 - 15P$

Q.3		Marks	CO
a)	A consumer purchases 100 units of a commodity when his income is ₹ 40,000 per month. Find out income elasticity of demand for the commodity if now the consumer is purchasing 200 units of it due to increase in his income to ₹ 50,000 per month. Mention the nature of the commodity with reasons.	3	CO2
b)	If quantity demand for a commodity declines from 500 to 300 units due to a rise in the price from ₹ 30 to ₹ 40 per unit, find out price elasticity of demand for the commodity with the help of arc method.	2	CO2

Q.4		Marks	CO
a)	A person deposits ₹ 8,00,000 in a bank for 8 years at 6% interest rate. Find out maturity amount of his account if the compounding is monthly.	2.5	CO3
b)	Find out future value of ₹ 10,00,000 after 9 years at 7.5% interest rate with the help of simple interest rate.	2.5	CO3

Q.5		Marks	CO
a)	A person needs ₹ 60,00,000 after 10 years to renovate her company. Find out how much money the person has to deposit now to get ₹ 60,00,000 after 10 years if the interest rate is 8% compounded annually along with the cash-flow diagram.	2.5	CO3
b)	A person invests an equal amount of ₹ 25,000 at the end of every year for 20 years in an insurance company. Find the maturity amount of his account if the interest rate is 10% compounded annually. Draw the cash-flow diagram from the insurance company's point of view.	2.5	CO3

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