NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

THEORY EXAMINATION

QUESTION PAPER

Month & Year of Exam: March, 2021

Programme: B.Tech.

Subject: Economics for Engineers

Course code: HSIR-12

Semester: 1st

Maximum marks: 50

Time allowed: 2 hrs 10 Min

Roll no. _____

No. Of questions to be attempted: **5**

Submission guidelines:

- Time limit for submission: 4:30 pm

- Part-A is to be submitted on **submissionseco@gmail.com**.

- Part-B is to be submitted on **bmassignment7@gmail.com**.

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PART- A

Q1. What do you mean by law of demand? Also explain the causes for downward sloping demand curve. (10 marks)

Q2. Describe in detail, law of variable proportions. Also discuss the causes of its application. (10 marks)

Q3. Define perfect competition. Also describe price and output determination under this market. (10 marks)

PART-B

Q4. Attempt the following questions:

a   The HVAC engineer for a company that constructed one of the world's tallest buildings (Burj Dubai in the United Arab Emirates) requested that $500,000 be spent on software and hardware to improve the efficiency of the environmental control systems. This is expected to save $10,000 per year for "z" years in energy costs and $700,000 at the end of

"z" years in equipment refurbishment costs. "z" is the 5+ sum of last two digits of your roll digit. Find the rate of return. (5 marks)

b Determine the economic service life at i = (2+last digit of your roll number) % per year for machine that has a first cost of $ 10000 and estimated operating costs and year end salvage values: (5 marks)

Year	Operating Cost ($)	Salvage value ($)
1	1000	7000
2	1200	5000
3	1500	4200
4	2000	3000
5	3000	2000

OR

Decide the best option using the annual worth analysis with the costs shown below, if the MARR per year is the sum of last two digits of your roll number. Revenues for all three alternatives are expected to be the same. (10 marks)

	Electric Powered	Gas Powered	Solar Powered
First cost, $	2500	3500	6000
Annual operating cost, $/year	900	700	50
Salvage value, $	200	350	100
Life, years	5	6	7

Q5. Discuss the objectives of fiscal policy. Mention key takeaways of Union Budget 2021-2022 and their economic implications. (5+5 marks)