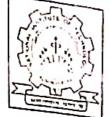
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA THEORY EXAMINATION.



End Sem. Question Paper

Month and Year of the Examination: 19 May 2025. Roll No. 6,26

Subject Industrial Engineering (IE).

Course No: MEPC-212,

Number of Questions to be attempted: 5,

Total No. of Questions: 5;

Semester: 4th Semester. Branch Mechanical Eng.

Maximum Marks: 5% Time allowed: 3 Hours.

NOTE: Attempt all five questions.

1. Following Table 1. Gives below comparative study of cost of several items for two years. Compute

S	of I of Rs. unit	ur bble	tos	_		a -:-	_			/ (10).
Items	Number of outputs (all of one kind) @ fts. \$0,000 per unit	Direct labour hours (variable with year)	Direct labor (in Rs.)	Capital depreciation (in Rs.)	Capital book value (in Rs.)	Total indirect cost (in Rs.)	Forcign exchange used	Energy used (a Rs. 4 per watt)	Raw material used (@ Rs. 1000 per ton)	Service of consultant hired (in Rs.)
Year-	. 100,	2000	1000	5000	20000	40000	.450 <u>\$</u>	500 Kw	Tons 1	1000
Year-	200	8000	45000	0009	250000	000099	Sioos	1800 Kw	ré Fons	8000

- 2. (a) Explain the objective and basic principle of Sales Forecasting for needs, and it related Collective opinion methods & Moving Average method explained, (b) The sale of the cycles in a shop in four consecutive months are given as 70, 68, 82, 95. Exponentially smoothing average method with a smoothing factor of ($\alpha = 0.4$) is used in forecasting. What is expected number of sales in the next month examined?.
- 3. (a)Difference b/w the fixed position layout and Product layout design influence in assemble manufacturing environments.
 - (b) Five critical factors affecting in selection of material handling equipment's, and its comparison among the conventional & AGV handling equipment adoption for high degree a Industrial flexibility. (6).
- 4. (a) A production manager for a tire company has inspected the number of defectivetiers in five random samples with 20 tiers in each sample. The table 2, below shows that the number of defective tiers in each sample of 20 tiers. Calculate the control limit.

Tive tiers in each and		culate tile com		1706	
Sample	1	11	111	17	V
No. of Defective tiers.	3	2	1	2	2
No. of tiers in each sample.	20	20	20	20	20
		ACCUPATION OF THE PERSON OF TH		400	

0.19 0.05 0.15 Proportion defective (b). Difference between the ABC and VED Analysis where, selection criteric based on ladustrial (5).drug manufacturing.

(4 *2.5).

5. Writes a short notes on following:

- (a) Industry 4.0
- (b) Lean Production.

(c) Macro & Micro Motion study

(d) Multi-factor Productivity.