Reliability and Diagnosis

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Laboratory Date: 7.11.2023
Worksheet Submission Date: 11.11.2023

WORKSHEET RD-3

ELECTRICAL EQUIPMENT'S RELIABILITY

A. Name of the analyzed component: failure_times_1.mat
B. Attempts' parameters: $n_0 =$ 25; $r_c =$ 9; $t_c =$ 7458; $t_t =$ 11000; $r_t =$ 25
C. Unit for **t**: hours

1. Experimental Data

Table 1. **Primary Sampled Data**

11999	11980	11999	7458.2	344.8291	10705	974.4007	5860.9		

Table 2. **Sorted Sampled Data**

Exhausted Sample
$S_E = \sum t_i =$ 226020

Censored Sample
$r_c =$ 9
$S_c =$ 2306500

Truncated Sample
$t_t =$ 11000
$r_t =$ 12
$S_T =$ 3414400

Table 3. **Grouped Data (Exhausted Sample)**

Group Index	Grouping Interval $u_i \div u_{i+1}$	Central Value u_{ci}	Δr_i	$r_i = \sum \Delta r_i$	n_i	$R = \frac{n_i}{n_0}$	$\lambda = \frac{\Delta n}{n_{i-1}} \cdot \frac{1}{\Delta t}$
1	[-1148; 10539)	4696	19980	3	4695.6	15.0051	
2	[13461; 25148)	19304	0	3	16383	52.3520	
3	[28070; 39757)	33913	6	9	33913	108.3724	
4	[42679; 54366)	48522	2	11	45600	145.7193	
5	[54366; 66053]	60209	14	25	63131	201.7393	

2. Computed Indicators

a) Exhausted Sample

$MTBF = \frac{S_E}{n_0} =$ 9040.6; $s =$ 4428.9

b) Censored Sample

$MTBF = \frac{S_C}{r_0} =$ 20344; $\lambda =$ 0.004915

c) Truncated Sample

$MTBF = \frac{S_T}{r+1} =$ 19980; $\lambda =$ 44289