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LABORATORY WORK SHEET

Date: .....

Roll No: 22955A0305 Name: E. Girish Chandra

Exp No: 03 Experiment Name: Ball Bearing

DAY TO DAY EVALUATION:

	Preparation	Algorithm / Performance in the Laboratory	Source Code / Calculations and Graphs	Program Execution / Results and Error Analysis	Viva voce	Total
Max. Marks	5	5	10	5	5	30
Obtained	4	4	4	3	3	18

Signature of Lab I/C

START WRITING FROM HERE:

Aim: To find the life expectency of Ball Bearing.

Apparatus:

Ball bearing experiment test Rig, digital Tachometer, infrared temperatures, thermometer, Ball Bearing, stopwatch.

Procedure:

1. Remove the support - Bearing block
2. fit suitable shaft spindle on the main shaft.
3. fit test Bearing in the sleeve of the test Bearing housing.
4. fit the ends caps of the housing
5. swing out the load lever.
6. Fit the bearing housing with test bearing on the shaft.
7. See that V-notch aligns with the knife edge of the lever.
8. when V-notch and knife-edge matches assume horizontal position of the lever.
9. Bring the support bearing block forward and its position
10. switch on the power supply and all instruments switches.

11. motor will start rotating tachometer will show shaft rotating speed.

12. set the requried time on the stopwatch

13. Put sufficient weight in weight pan

14. Note down the different reading as speed, temparature, load and time.

observation:

S.NO	Time (sec)	speed (RPm)	Load (kg)	Temperature (°c)
1	5	850	5	29.9
2	10	1054	10	32-5
3	15	1070	15	35.4
4	20	1020	20	36.1

Specification:

Drive motor capacity : 1 Phase DC, rPm = 1500

Temparature indicator : Range 0-250°c

sensor : Cr-Al thermocouple

Calculation :

Bearing under test = 6

Dynamic load capacity as per catalogue specification (kg) = 7020

mean rpm = 1038.5 rpm

mean load = 12.5 kg

life expected of bearing (in hours) =

$$\frac{\text{Dynamic capacity of bearing} \times 10^6}{\text{mean load applied} \times D}$$

where

R = mean rpm x 60

n = 3 for Ball bearing

Result :

The experiment is conducted and life expectancy of ball bearing is obtained as 4.4×16" hour