

Name: _____

Matric Number: _____

Section / Group: _____

Date of experiment: _____

EXPERIMENTAL DATA

Table 1 System Characteristic

Rotational speed, n (rpm)	V_1 (m ³)	V_2 (m ³)	Δt (s)	Inlet pressure, p_1 (bar)	Outlet pressure, p_2 (bar)
600					
800					
1000					
1200					
1400					
1600					
1800					

Table 2 Pump characteristic for one pump at rotation speed 1400 rpm.

Position Ball-cock 8	V_1 (m ³)	V_2 (m ³)	Δt (s)	Inlet pressure p_1 (bar)	Outlet pressure p_2 (bar)
0°					
30°					
45°					
60°					
75°					
90°					

EXPERIMENTAL RESULT

Table 3 System Characteristic

Rotational speed, n (rpm)	Volume flow rate, \dot{V} (m ³ /s)	Inlet pressure, p_1 (bar)	Outlet pressure, p_2 (bar)	Delivery head, H (m)
600				
800				
1000				
1200				
1400				
1600				
1800				

Table 4 Pump characteristic for a pump at rotation speed 1400 rpm

Position Ball-cock 8	Volume flow rate, \dot{V} (m^3/s)	Inlet pressure p_1 (bar)	Outlet pressure p_2 (bar)	Delivery head H (m)
0°				
30°				
45°				
60°				
75°				
90°				

SAMPLE CALCULATION

Show a sample of calculation and attach with the report.

DISCUSSION

1. Based on the plotted graph, determine the value of operating point for this pump.
2. The pump performance data when operating at $n = 1400$ rpm are shown in Table 5 below. Plot the performance curves of the pump and identify the best efficiency point. Is this operating point reasonable? Explain your answer.

Table 5: Pump performance data

\dot{V} in m^3/s	Efficiency, η
5.93	0.265
5.68	0.265
4.98	0.259
3.38	0.197
1.49	0.1
0	0

3. What is the important of knowing the pump operating point to industry?

CONCLUSION

State the conclusions of the experiment based on the understanding from results, graphs and discussions.