

# ANSWER SHEET

Name: \_\_\_\_\_

Matric Number: \_\_\_\_\_

Section / Group: \_\_\_\_\_

Date of experiment: \_\_\_\_\_

## EXPERIMENTAL DATA

**Table 1** System Characteristic

Rotational speed, $n$ (rpm)	$V_1$ (m <sup>3</sup> )	$V_2$ (m <sup>3</sup> )	$\Delta t$ (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 <sup>3</sup> )	$V_2$ (m <sup>3</sup> )	$\Delta t$ (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 <sup>3</sup> /s)	Inlet pressure, $p_1$ (bar)	Outlet pressure, $p_2$ (bar)	Delivery head, $H$ (m)
600				
800				
1000				
1200				
1400				
1600				
1800				

## ANSWER SHEET

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

Position Ball-cock 8	Volume flow rate, $\dot{V}$ ( $\text{m}^3/\text{s}$ )	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 $\text{m}^3/\text{s}$	Efficiency, $\eta$
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.