Experiment Number:

Continued From Page Number:

Extra page to be used when needed for any experiment

Continued on page number:

Page Number ( )

Size Reduction of Powders

SR Group Report

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Continued on page number:

Results

Insert Table/s of:

- *Numbers collected during practical session should be properly presented and arranged. (Hint: use similar tables to those you filled in the results sheets you submitted to your instructor)*

Attach these papers to your report IMMEDIATELY after this page of the report.

Calculations:

Insert Excel Sheets (Tables & Charts) of:

- *Data analysis for each sampling point (0, 10, 20, 30, & 40minutes). (a table & a chart for each time)*
- *Optimum Milling Capacity Time (Table & chart)*
- *Frequency Distribution Curve*

Attach these papers to your report IMMEDIATELY after "Results" page of the report.

Discussion:

(here add information about the following: Sieving process: arrangement of sieves & powder retention, Process results: the trend of median particle size with milling time, interpretation of frequency distribution curves.)

Conclusion:

(here conclude about: Optimum milling time, Frequency distribution curves: arrangement & distances between curves)

Continued on page number:

SR Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:

Section[2]	Student Name[3]	Percentage of the Performed workload[4]

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Continued on page number:

SR Student Report

Student Name: ……

Samples Analysis

I choose Sample at …… ***minute and interval*** ……

(***Hint:*** *for the selected interval show and* ***calculate*** *in details the following 7 numbers- Upper Interval Limit, Lower Interval Limit, Interval Mid-point, Retained Weight (Frequency), % Retained (% Frequency), Cumulative % Over Size, and Cumulative % Under Size)*

Calculations ***(Sample)***

NB.: Each student should show different example from other group members

Continued on page number:

Powder Mixing

PM Group Report

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Continued on page number:

Results

Insert Table/s of:

- *Numbers collected during practical session should be properly presented and arranged. (Hint: use similar tables to those you filled in the results sheets you submitted to your instructor)*

Attach these papers to your report IMMEDIATELY after this page of the report.

Calculations:

Knowing that the calibration curve equation is:

y = 0.0193x + 0.0071 (unit of concentration is mg%)

Insert Excel Sheets (Tables & Charts) of:

- *Mixing Data & Profile.*

Attach these papers to your report IMMEDIATELY after "Results" page of the report.

Continued on page number:

Discussion:

(here add information about the following: Mixing; which ingredient to place first and why?, Sampling methodology, how & why?, Description of mixing profile.)

Conclusion:

(here conclude about: Mixture type and Optimum mixing time)

Continued on page number:

PM Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:		
Section[2]	**Student Name[3]**	**Percentage of the Performed workload[4]**

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Continued on page number:

PM Student Report

Student Name:

Mixing Profile:

Calculations (one example) *(I choose sample number …… taken at..... minutes)*

- ***Concentration, (mg% w/v):***

- ***Concentration, (mg% w/w):***

NB.: Each student should show different example from other group members

Granulation of Powders

GP Group Report

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results

Insert Table/s of:

- *Numbers collected during practical session should be properly presented and arranged. (Hint: use similar tables to those you filled in the results sheets you submitted to your instructor)*

Attach these papers to your report IMMEDIATELY after this page of the report.

Calculations:

Insert Excel Sheets (Tables & Charts) of:

- *Table for binder weight, practical weight, theoretical weight, percentage yield, and percentage yield per binder unit mass.*

Attach these papers to your report IMMEDIATELY after "Results" page of the report.

For each binder, calculate the % Yield per unit mass of the binder (%Yield/1gram of the binder), for each show detailed steps

1. ***Distilled Water***

2. ***Sucrose***

3. ***Starch***

4. ***PVP***

Discussion:

(here add information about the following: The process; type of the granulation method used with short summary, End point testing, final granules properties.)

Conclusion:

- ✓ ***The "Best Binder" & Justify why?***

- ✓ ***The "Most Efficient Binder" & Justify why?***

GP Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:		
Section[2]	**Student Name[3]**	**Percentage of the Performed workload[4]**

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Characterization of granules and powder

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results

Flow Rate & Angle Of Repose:

Amount tested (grams):

GranulesType	Trial Number	Flow Time Second	Angle of Repose Height mm	Angle of Repose Diameter mm
A	1			
	2			
	3			
B	1			
	2			
	3			
C	1			
	2			
	3			
D	1			
	2			
	3			
Lactose	1	6.11	29.23	
	2	6.32	29.54	
	3	6.92	29.65	

100

Bulk & Tapped Densities

Amount tested (grams):

Granules Type	Bulk Volume, ml	Tapped Volume, ml
A		
B		
C		
D		
Lactose	84.5	56

Moisture Content

Granules Type	Wet Weight, grams	Dry Weight, grams
A		
B		
C		
D		
Lactose	1.012	1.006

Particle Size Analysis

Pore Size mm	*Tare Wt grams*	*Gross Wt, grams*				
		Granules A	*Granules B*	*Granules C*	*Granules D*	*Lactose*
0.000	*354.4*					*Cancelled*
0.063	*256*					
0.09	*265.1*					
0.125	*267.4*					
0.250	*258.9*					
0.5	*292.6*					
0.71	*317.4*					

Calculations:

Flow Rate Analysis:

Granules		Amount Tested	Flow Time, Seconds				Flow Rate
Code	Binder	gm	Trial 1	Trial 2	Trial 3	Average	gm/second
A	Distilled Water						
B	Sucrose						
C	Starch						
D	PVP						
Lactose							

Angle of Repose Analysis:

Granules			Diameter, mm	Radius mm	Height, mm		Angle of Repose	
Code	Binder	Trial			H	Average	Tan θ	θ
A	Distilled Water	1						
		2						
		3						
B	Sucrose	1						
		2						
		3						
C	Starch	1						
		2						
		3						
D	PVP	1						
		2						
		3						
Lactose		1						
		2						
		3						

Experiment Number: .....

Continued From Page Number: .....

Bulk and Tapped Densities Analysis:

Granules		Amount Tested	Volume, mL		Density, gm/mL		Compressibility
Code	Binder	gm	Bulk	Tapped	Bulk	Tapped	Index, %
A	Distilled Water						
B	Sucrose						
C	Starch						
D	PVP						
Lactose							

Moisture Content Analysis

Granules		Wet Weight, gm	Dry Weight, gm	MC %	LOD %
Code	Binder				
A	Distilled Water				
B	Sucrose				
C	Starch				
D	PVP				
Lactose					

Particle Size Analysis:

Insert Excel Sheets (Tables & Charts) of Particle size analysis for the four granules

Attach these papers to your report IMMEDIATELY after this page of the report.

Continued on page number :

Summary Table

Particles	*Flow Rate gm/second*	*Angle of Repose degrees*	*CI %*	*LOD %*	*MC %*
Granules A					
Granules B					
Granules C					
Granules D					
Lactose					

Particles	*Median Particle Size mm*	*Overall Flow*	*Rank*
Granules A			
Granules B			
Granules C			
Granules D			
Lactose			

Discussion:

(here add information about the following: Flow rate and angle of repose measurement method, discuss each calculated parameter/number indication.)

Conclusion:

(here conclude about granules with best flow & justify your decision)

GC Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:

Section[2]	Student Name[3]	Percentage of the Performed workload[4]

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Experiment Number:

Continued From Page Number:

GC Student Report

Student Name:

Show an example (only one) on how to calculate each of the following parameters: Please write beside your example which granules type you want to show

1. ***Flow Rate:*** *(I choose .....)*

2. ***Angle of Repose:*** *(I choose .....)*

3. ***Carr's Index:*** *(I choose .....)*

4. **Loss On Drying *(LOD%):*** *(I choose .....)*

5. **Moisture Content (MC%)*:*** *(I choose .....)*

Effect of Additive of the Physical Properties of granules and Powder

NB.: Each student should show different example from other group members

EA Group Report

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results

Effect of glidant:

Amount tested (grams):

Talc %	Trial Number	Flow Time Second	Angle of Repose Height mm	Angle of Repose Diameter mm	Bulk volume ml	Tapped volume ml
0	1			100		
	2					
	3					
1	1					
	2					
	3					
3	1					
	2					
	3					
6	1					
	2					
	3					

Effect of lubricant:

Mg-Stearate %	Trial Number	Flow Time Second	Angle of Repose Height mm	Angle of Repose Diameter mm	Bulk volume	Tapped volume
0.00	1			100		
	2					
	3					
0.25	1					
	2					
	3					
0.5	1					
	2					
	3					
1.00	1					
	2					
	3					

Calculations:

i. Effect of Glidant:

1. Talc Effect on Flow Rate:

Talc %	Amount Tested gm	Flow Time, Seconds				Flow Rate gm/second
		Trial 1	Trial 2	Trial 3	Average	
0.00						
1.00						
3.00						
6.00						

2. Talc Effect on Flow Rate:

Talc %	Trial	Diameter, mm	Radius mm	Height, mm		Angle of Repose	
				H	Average	Tan θ	θ
0.00	1						
	2						
	3						
1.00	1						
	2						
	3						
3.00	1						
	2						
	3						
6.00	1						
	2						
	3						

3. Talc Effect on Bulk and Tapped Densities:

Talc %	Amount Tested gm	Volume, mL		Density, gm/mL		Compressibility Index, %
		Bulk	Tapped	Bulk	Tapped	
0.00						
1.00						
3.00						
6.00						

ii. Effect of Lubricant:

1. Mg-stearate Effect on Flow Rate:

Mg-stearate %	Amount Tested gm	Flow Time, Seconds				Flow Rate gm/second
		Trial 1	Trial 2	Trial 3	Average	
0.00						
0.25						
0.5						
1.00						

2. Mg-stearate Effect on Flow Rate:

Mg-stearate %	Trial	Diameter, mm	Radius mm	Height, mm		Angle of Repose	
				H	Average	Tan θ	θ
0.00	1						
	2						
	3						
0.25	1						
	2						
	3						
0.5	1						
	2						
	3						
1.00	1						
	2						
	3						

3. Mg-stearate Effect on Bulk and Tapped Densities:

Mg-stearate %	Amount Tested gm	Volume, mL		Density, gm/mL		Compressibility Index, %
		Bulk	Tapped	Bulk	Tapped	
0.00						
0.25						
0.5						
1.00						

iii. Insert Excel Sheets (Charts) those represent the effect of Glidant on Flow properties "angle of repose".

Attach these papers to your report IMMEDIATELY after this page of the report.

Summary Table

Glidant %	*Flow Rate gm/second*	*Angle of Repose degrees*	*CI %*	*Overall Flow*	*Rank*
0					
1					
3					
6					

Lubricant %	*Flow Rate gm/second*	*Angle of Repose degrees*	*CI %*	*Overall Flow*	*Rank*
0					
0.25					
0.5					
1					

Discussion:

(here add information about the following: Talc effect pattern, Magnesium stearate effect pattern.)

Conclusion:

(here conclude about: Talc; critical concentration & why? Magnesium stearate the best concentration & why?.)

EA Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:

Section[2]	Student Name[3]	Percentage of the Performed workload[4]

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Experiment Number:

Continued From Page Number:

Effervescent Granules

EG Group Report

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results:

Part 1: Preparation of effervescent granules

Binder End point (ml)	***Tray Weight (g)***	***Wet Weight (g)***	***Dry Weight (g)***

Part 2: Evaluation of effervescent granules

1) **Effervescent volume**
2) **Effervescent time**
3) **Disintegration Time**

Weight tested(g):2.0 g

Trial Number	Initial volume (ml)	Effervescent volume (ml)	Effervescent time (min)	Disintegration Time (Yes/No)
1				
2				
3				

4) Particle size by image analysis

Attach three image of your granules

Attach these papers to your report IMMEDIATELY after this page of the report.

Calculation

- **%Yield**

Tray Weight (g)	Wet Weight (g)	Dry Weight (g)	Theoretical weight (g)	Actual weight (g)	% yield

- **Particle size analysis**

Insert Excel Sheets (Tables & Charts) of particle size analysis of your granules

Attach these papers to your report IMMEDIATELY after this page of the report.

Discussion:

(here add information about the following: (used method to prepare effervescent granules, used method to characterize effervescent granules, describe the reaction between effervescent granules and water in term of effervescent time and volume, particle size by image analysis in term of mode and particle size distribution)

Conclusion:

(here conclude about: Effervescent granules as pharmaceutical dosage form & advantages comparing to other granules)

EG Group Report

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:

Section[2]	Student Name[3]	Percentage of the Performed workload[4]

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group reportsection
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results

A. Weight Uniformity test:

Tablet No.	Tablet weight (g)	Tablet No.	Tablet weight (g)	Tablet No.	Tablet weight (g)	Tablet No.	Tablet weight (g)
1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

Weight of 20 tablets (g): ……

B. Thickness Uniformity, Hardness and diameter tests:

Tablet No.	Tablet thickness (mm)	Tablet Hardness (N)	Tablet Diameter (mm)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

C. Friability test:

Initial Weight (grams)	Final Weight (grams)	Observation (Yes or No)		
		Capping	Lamination	Breakage

Calculations:

1. **Weight Variation Test:**

Tablet Number	Tablet weight g	Percentage Difference
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Weight of 20 tablets , g		
Average Tablet Weight, g		

2. **Hardness Test:**

Acceptance range for our tablets → each tablet hardness should be not less than 120 N and not more than 200 N.

Tablet Number	Tablet Hardness N
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

3. Thickness Variation Test:

Tablet Number	Tablet Thickness mm	Percentage Difference
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Average Tablet Thickness, mm		

4. Diameter Variation Test:

Tablet Number	Tablet diameter mm	Percentage Difference
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Average Tablet Diameter, mm		

5. Friability Test:

Initial Weight (grams)	*Final Weight (grams)*	*% weight loss*	*Observation (Yes or No)*		
			Cleaved	*Cracked*	*Breakage*

Sample Calculation

Part A: ***Percentage Difference (Weight Uniformity Test)***

Part B: ***Percent Weight Loss (Friability Test)***

Discussion:

(here add information about: Description of the tablets after friability test, each test of the four Quality Control tests mention your results relative to the reference values)

Conclusion:

(here conclude [passed/failed] about each test and overall evaluation)

Experiment Report Workload Distribution Table Coordinator

for Current Experiment[1]:

Section[2]	Student Name[3]	Percentage of the Performed workload[4]

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Quality control of tablets – part 2

Objective/s:

Formula: *(Table)*

Formula Number	Ingredients	Quantities

Method:

(This section should contain any calculations related to prior experiment preparation, if none please write NA and close it)

Results

D. Disintegration time test:

Product name: …… Product batch number: ……

Disintegration time minutes

E. Content Uniformity test:

Product name: …… Product batch number: ……

Tablet No.	Absorbance
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Calculations:

Use calibration curve equation for famotidine in buffer pH 4.5 as solvent:

Y=27.5 X (unit of concentration is mg/ml)

Tablet no.	absorbance	Diluted Concentration mg/ml	Dilution factor	Concentration mg/ml	Actual Famotidine content mg	% of the labeled drug content
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Discussion:

(here add information about: Description of tablets during Disintegration test, mention your results relative to the reference values for each test quality control test (content uniformity and disintegration test))

Note: regarding our disintegration test, each tablet should disintegrate in less than 15 minutes

Conclusion:

(here conclude [passed/failed] about each test)

Experiment Report Workload Distribution Table

Coordinator for Current Experiment[1]:		
Section[2]	**Student Name[3]**	**Percentage of the Performed workload[4]**

[1]Mention the name of the student/ group member who did arrange the work related to the current experiment group report/work management.
[2]Section or part of the group report
[3]Mention the name of student/the group member who took responsibility of the specified group report section
[4]Relative to the whole workload used to prepare the current group report.

Notes:

Continued On Page Number:

Student Name:

Content uniformity:

Calculations (one example) *(I choose tablet number ……)*

- ***Actual famotidine content, (mg):***

- ***% of the labeled drug content:***

NB.: Each student should show different example from other group members