PUNE DISTRICT EDUCATION ASSOCIATION'S Seth Govind Raghunath Sable College of Pharmacy, Saswad

PARTICIPATIVE LEARNING AND EXPERIENTIAL LEARNING

2020-21

Pune District Education Association's Seth Govind Raghunath Sable College of Pharmacy, Saswad, Pune

Group Activity (Preparation of Charts)- 2020-21

Class: S. Y. B. Pharm.

Subject: Pharmaceutical Organic Chemistry-II

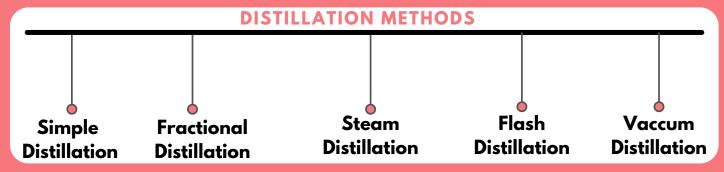
Sr. No.	Name of Topic	Roll No.	Remark
1.	Hazard Symbols	7,24,34,44,47, 63	V. good
2.	Determination of Physical Constants	45,46,50,61	V. good
3.	Distillation Methods	21,41,42, 52,53	V. good
4.	Heterocyclic Compounds	4, 5, 6, 20, 20, 35	Satisfactory
5.	Stereoisomers	22, 37, 38, 39, 40, 54	Good
6.	Structure and Uses of Some Polynuclear Hydrocarbons	12, 59, 60, 62, 64 and 70	Good

Prof. J. R. Jagtap

Name and Sign. of Subject Teacher

DISTILLATION METHODS

Distillation,; The operation of distillation is employed for the purification of liquid from nonvolatile impurities. Distillation is the process involving the conversion of a liquid vapour that is subsequently condensed back to liquid form.

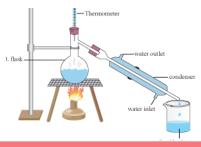


1: Simple / Differential Distillation:

Defination:Simple distillation involves heating the liquid mixture to the boiling point and immediately condensing the resulting vapors

Process of simple distillation:-

- 1) Distillation flask with a thermometer is placed in a heating mantle & is connected to condenser .
 - 2) The tubes on the condenser are attached to a water source with the water flowing in the lower end & flowing out the high end of the condenser.
- 3) The thermometer is inserted in the distillation flask through a in $\mathop{\hbox{cork}}\nolimits$ stopper .
- 4) The distillation flask being heated in heating mantle.

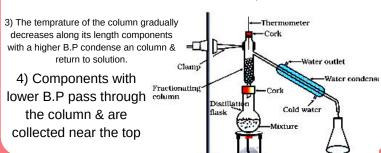


2: Fractional Distillation

Defination:-

Fractional distillation is the separation of a mixture into its component parts, or fractions. According to their different boiling point.

- 1) Vapours from a boiling solution are passed along a tall column called a fractionating column
- 2) The column is packed with plastic or glass beads to improve the separation by providing more surface area for condesation & evaporation .



3: Steam Distillation

When a mixture of two practically immiscible liquids are heated to the vapor phase, each constituent independently exerts its own vapor pressure as a function of temperature as if the other constituent were not present.

Consequently, the vapor pressure of the whole system increases. Boiling begins when the sum of the partial pressures of

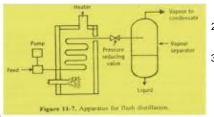
In this way, many organic compounds insoluble in water can be purified at a temperature well below the point at which decomposition occurs.

Were S. vapors flow into steam tube 5. Water vapors and volatile molecules then travel ktrough a cold-water refrigerated serpentine and condense themselves into a liquid condense in condenser 1. Heating mantle A source of heat 4. The steam naturally captures the volatile molecules that are contained in the plant 6. Mixture of essential oils and water in receiving flask

4:Flash / Equilibrium distillation :-

Defination: Flash distillation is defined as a process in which entire liquid mixture is suddenly vapourized (flash) by passing it from high pressure zone to low pressure zone.

1) when a hot mixture is allowed to enter from high pressure zone to low pressure zone the entire liquid mixture suddenly vaporized .

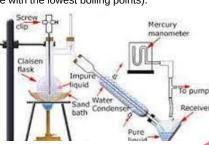


- 2) During this process chamber gets cooled.
- Individual vapour phase molecule of higher boiling fraction gets
 condensed.

5:Vacuum Distillation:

Vacuum distillation is a method of distillation whereby the pressure above the liquid mixture to be distilled is reduced to less than its vapor pressure (usually less than atmospheric pressure) causing evaporation of the most volatile liquid(s) (those with the lowest boiling points).

This distillation method works on the principle that boiling occurs when the vapor pressure of a liquid exceeds the ambient pressure. Vacuum distillation is used with or without heating the solution. materials (such as beta



PDEA's Seth Govind Raghunath Sable College of Pharmacy, Saswad **Group Presentation Activity**

2020-21

S. Y. B. Pharm. (Sem.-IV)

Pharmaceutical Organic Chemistry-III

		Name of the Student	Name of Topic	Remark	Grade
Sr.	Date	Name of the student			A
No.	23/06/2021	Aditya Javalkar	Pyrrole	Good	A
1	23/06/2021	Omkar Kondhalkar		Good	A
2		Akash Kharat		Good	A
3		Mahadev Parsalge		Good	A
4		Raj Khedekar		Good	
5	25/06/2021	Kalyani Shipalkar	Furan	V. good	A+
6	25/06/2021	Yogita Khaire		Good	A
7		Tanuja Kande		Good	Α
8		Mayur iKhaire		Network issue	•
9		Isha Dhole		Network issue	-
10	25/05/2021	Sakshi Gaikwad	Thiophene	Good	A
11	25/06/2021	Ancha IYadav		V. good	A+
12		Ritusha Zagade		Good	A
13		Archana Devi		Good	A
14		Priyanka Zende		Good	A
15		The state of the s	Pyrazole	Good	A
16	26/06/2021	Chetan Natu	Fyrazoic	Good	A
17		Akash Dorge		Network issue	•
18		Sujit Gaikwad		Good	A
19		Harshad Tanpure		Good	A
20		Abhijeet Gore	Imidazole	Good	A
21	28/06/2021	Pooja Kore	Imidazoie	v. good	A+
22		Vrushali Padir		v. good	A+
23		Shivanjali Nevase		V. good	A+
24		Chaitali Jagtap		Good	A
25		Amruta Kharade	-11	Good	A
26	29/06/2021	Ruta Khaladkar	Thiazole	Good	A
27		Shrinivas Nikate			A
28		Angha Kawade		Good	A
29		Yash Nimbalkar		Good	
30		Sahil Jagtap		Good	A
31	30/06/2021	Kshitija Chandgude	Pyridine	Excellent	0
32		Avishkar Deshmukh		Good	A
33		Chetana Dodke		V. good	A+
34		Ruchita Mahala		Good	A
35		Swaroop Jadhav		Good	A
36	02/07/2021	Prasad Zende	Quinoline	V. good	A+
37	JEJU/JEULI	Anil Jadhav		v. good	A+
38		Aditya Pawar		Good	A
39		Farhan Nazir		Good	A

40		Om Sathe		Not feeling well	
41	03/07/2021		Isoquinoline	V. good	A+
42		Samadhan Gade		Good	Α
43		Gitanjali Darade		Good	Α
44		Omkar Takawale		Good	A
45		Chaitali Jagtap		Network issue	
46	03/07/2021	Ranjeet Sarawade	Oxazole	Good	A
47		Omkar Gawade		Satisfactory	В
48		Omkar Kulkarni		Satisfactory	В
49		Akash Kharat		Good	A
50		Mahadev Parsalge		Good	A
51	13/07/2021	Sakshi Kolhe	Acridine	V.Good	A+
52		Nikhil Darkonde		Satisfactory	В
53		Akash Darekar		Good	A
54		Nivrutti More		Good	А
55	14/07/2021	Dipti Bhorade	Pyrimidine	V. good	A+
56		Prajakta Beldar		V.good	A+
57		Shruti Gaikwad		V. good	A+
58		Adesh Jadhav		Satisfactory	В
59		Ashish Raut		Not feeling well	
50	16/07/2021	Kalyani Kunjir	Indole	Excellent	0
51		Mansi Patil		V. good	A+
2		Vishalakshi Rokade		V. good	A+
3		Sakshi Kale		V. good	A+
4		Vikas Dhage		Good	A
5	17/07/2021	Abhishek Yadav	Purine	V.good	A+
6		Dhanshree Salunke		V.good	A+
7		Poonam Wagh		V.good	A+
8		Shivani Jadhav		V.good	A+
9		Tanuja Bhosale		V.good	A+
)	19/07/2021	Swati Marewar	Azepine	V. good	A+
		Anchal Paddher		V.good	A+
		Shreya Shitole		Good	
		Vaishnavi Jadhav		Good	A
		Prateeksha Pandit		V.good	Α

Mrs. JayashrrR. Jagtap Subject Teacher



Pharmaceutical organic chemistry II

Assignment

Group no.-: 8th (43-48)

Question:

1. Write all possible Chemical tests and principles involved in the detection of Amines (Primary, secondary and tertiary amines).

Following are the possible Chemical tests and principles involved in the detection of amines:

• Solubility Test:

Amines are organic compounds which is basic in nature, so they dissolve in mineral acids like hydrochloric acid. But this test is not a confirmation test for amines.

The chemical reaction is given below.

$$C_6H_5NH_2 + HCI \rightarrow C_6H_5NH_3^+CI^-$$

• Litmus Test:

Amines are basic in nature. So it turns red litmus paper blue. This test is also not a

confirmation test for amines.

The chemical reaction is given below.

$$CH_3-CH_2-NH_2 + H_2O \rightarrow CH_3-CH_2-NH_3^+ + OH^-$$

Carbylamine Test :

Principal :-

The carbylamine reaction (also known as the Hoffmann isocyanide synthesis) is the synthesis of an isocyanide by the reaction of a primary amine, chloroform, and base.

Reaction :-

The chemical reaction is given below. = $CHCI3 \rightarrow RNC(isocyanide) + 3KCI + 3H2O$

R-NH2 + 3KOH +

In this reaction, the analyte is heated with alcoholic potassium hydroxide and chloroform. If a primary amine is present, the isocyanide (carbylamine) is formed.

This Reaction is given only by 1° Amine.

Both aliphatic and aromatic amines gives positive for this test.

Mechanism-:

The mechanism involves the addition of amine to dichlorocarbene, a reactive intermediate generated by the dehydrohalogenation of chloroform. Two successive base-mediated dehydrochlorination steps result in formation of the isocyanide.

^{*}Secondary and tertiary amines do not give this test.

Test	Observation	Inference
0.2gm or 0.2ml compound + 2ml alcoholic KOH solution + 2-3 drops of chloroform solution. Warm it carefully.	A fuel smell of iso cyanide.	A 1° aliphatic or aromatic amine is confirmed.

For better understanding watch this video :- https://youtu.be/XopvgYTP_AI

• Nitrous Acid test:

Principal:-

Nitrous acid (HNO2 or HONO) reacts with aliphatic amines in a fashion that provides a useful test for distinguishing primary, secondary and tertiary amines.

Nitrous acid reacts with all types of amines to yield different products

Reaction:-

(1) Primary aliphatic amines react with nitrous acid to produce nitrogen gas which is seen as bubbles.

$$RNH_2 + HONO \longrightarrow ROH + H_2O + N_2$$
Primary
Alcohol
amine

An aromatic primary amine reacts with nitrous acid forms a diazonium salt

$$\begin{array}{c} R - \ddot{N}H_{2} \xrightarrow{HNO_{2}, 0^{\circ}} \left[R \xrightarrow{H} \ddot{H} \ddot{N} = 0 \right] \times \xrightarrow{H} \left[R \xrightarrow{N} - \ddot{N} = 0 \right] \xrightarrow{\text{tautomerism}} \left[R - \ddot{N} = \ddot{N} - OH \right] \\ Alcohols \\ \text{and} \\ \text{Alkenes} \end{array} \right\} \xrightarrow{H_{2}O} \left[R \oplus \right] \xrightarrow{-N_{2}} \left[R - N = N : \right] \times \xrightarrow{H_{2}O} \left[R - \ddot{N} = \ddot{N} - OH_{2} \right] \\ \text{a diazonium cation} \end{array}$$

(2)Secondary amines react with nitrous acid to form a yellow oily nitrosoamine.

$$R_2NH + HONO \longrightarrow R_2N \longrightarrow NO + H_2O$$

Secondary Nitrosoamine

(3) Tertiary amines react with nitrous acid to form soluble nitrite salts.

$$\begin{array}{ccc} R_3N & + HONO & \longrightarrow & R_3NH^+ONO^- \\ \hline \text{Tertiary} & & \text{Trialkyl ammonium} \\ \text{amine} & & \text{nitrite} \end{array}$$

$$\begin{array}{c}
R \\
\vdots \\
N - R + H - \ddot{O} - \ddot{N} = \ddot{O} \\
R
\end{array}$$

$$\begin{array}{c}
R \\
\vdots \\
N - \ddot{N} = \ddot{O} \\
R$$
Tertiary amine

Test	Observation	Inference
0.2gm or 0.2ml compound + 2ml Conc.HCL + 2ml water in boiling tube. Cool the solution in ice bath yo	Vigorous evolution of N2	An aliphatic 1° aminemay be present (confirm by carbylamin e test)

0°C - 5°C. To this add a cooled (at 5°C) solution of NaNO2 (0.2 gm in 2-3 ml of water) drpowise and mix well. Test for presence of free HNO2 (starch iodide paper turns blue when treated with HNO2,when free HNO2 is not present, add some more cooled NaNO2 , solution.	Compound dissolves, but reprecpitates on neutralization of solutions. Clear solutions. An oily products separate or solution is cloudy. Deep orange red solid	A 3° aliphatic or a heterocycli c amine may be present. An aromatic 1° amine may be present (confirm by azo dye test) A 2° amine may be present (confirm by Lieberman n nitroso test) 3° aromatic amine may be present (confirm by Lieberman n nitroso test)

• Azo - Dye Test :

Principal:-

Aromatic primary(1°) amine can be determined by azo-dye test. Aromatic amines reacts with nitrous acid(HNO2) which gives 'diazonium salt'. This compound further reacts with phenol which gives 'orange azo dye', which is insoluble in water.

Reaction:-

Eg.When aniline is reacts with nitrous acid(HNO2) with hydrochloric acid(HCI) at 0-5°C to produce diazonium salt. This diazonium salt further reacts with phenol i.e. betanaphthol which gives orange azo-dye compound.

$$NH_2 + HNO_2 + HCI \longrightarrow N^+ \equiv NCI^- + H_2O$$

$$Nitrous$$

$$acid$$

$$Benzene \ diazonium \ chloride$$

$$N \equiv N \longrightarrow OH$$

$$OH$$

$$OH$$

$$Azo \ dye$$

Test	Observation	Inference
Take 3 test tubes. In first test tube take 0.2g or 2ml	Formation of an orange-red dye.	Aromatic primary(1°) amine is confirmed.

compound	
compound + 2ml of	
dilute HCl,	
cool to	
0-5°C. In	
second test	
tube take	
0.2g of	
NaNO2 +	
2ml of	
water cool	
to 0-5°C.	
Mix these	
two test	
tubes. To	
this add a	
well cooled	
solution of	
0.2g of	
beta-napht	
hol in 5ml	
of 10%	
NaOH	
dropwise.	
Stir well.	

For more information from practical view please tap on follow link :- https://youtu.be/6XjWj5L-nZE

2. How will you distinguish primary, secondary and tertiary amines.

:-

The distinguish test for amine is;

Hinsberg test:-

Principal:-

Hinsberg test is a chemical reaction that is used to distinguish between primary, secondary, tertiary amines. This reaction was described first in 1890 by the German chemist Oscar Heinrich Daniel Hinsberg. In the Hinsberg Test, the amines act as nucleophiles and attack the electrophile (sulfonyl chloride).

Reaction:-

Primary amines

1° reacts with benzene sulfonyl chloride to produce substituted sulfonamide which contains an acidic hydrogen and dissolve in basic medium.

secondary amine

2° forms a substituted sulfonamide which is insoluble in alakali because it does not have acidic hydrogen.

tertiary amine

3° forms a substituted sulfonamide which is insoluble in alkali because it does not have an acidic hydrogen.

The reagent used in this test is benzene sulfonyl chloride. Amines reacts with benzene sulfonyl chloride in the alkaline medium.

Test	Observation	Inference
0.2g or 2ml of compound + 2ml of	Yellow after shaking	Primary amine is confirmed.
pyridine + 2ml of freshly prepared	Orange colour	Secondary amine is confirmed.
2% aqueous NaOH solution. Shake well and 2 drops of benzene sulphonyl chloride.	Deep red colour or purple colour	Tertiary amine is confirmed.

Note:

Tertiary amines:

Precipitate in the test tube but dissolves in concentrated HCI.

Secondary amines: Precipitate in test tube but does not dissolve in concentrated hydrochloric acid.

Primary amines:

No reaction or precipitate, on adding concentrated hydrochloric acidinsoluble material is seen.

Pharmaceutical Organic Chemistry - 11

Group assignment

Submitted by Roll no.:- 55 to 62, (Vaishnavi Kshirsagar)



Question: 1. Write all possible Chemical tests and principles involved in the detection of Amines (Primary, secondary and tertiary amines)

Answer: Chemical test for detection of amines are as follows:

Nitrous acid test:-

Both aliphatic and aromatic secondary amines react with nitrous acid to form N-nitroso compounds called nitrosamines. They are yellow oils or solids.

$$R_2NH + HONO \rightarrow R_2N - N = 0 + H_2O$$

Tertiary aliphatic amines are protonated by dil. HCl to give a water soluble salt. While tertiary aromatic amine gives a salt of C-nitrosamine (orange), which is then converted to green coloured C-nitrosamine by the addition of dil. NaOH.

Sr.No	Test	Observation	Inference
1	Nitrous acid test 0.2 gm sample + 2ml conc. HCl + 2ml water in boiling tube. Cool to 0- 5 To this, add a cooled solution		1.Aliphatic primary amine May be present(confirm by carbylamine test)
	of $NaNO_2$ (0.2gm in 2-3ml water) dropwise and mix well. Test for the presence of free	2.Compound dissolved but reprecipitates	2.A tertiary aliphatic or a heterocyclic amine may be present.
	nitrous acid (starch iodide paper turns blue when treated with HNO ₂) If free H		3.An aromatic primary amine may be present.(confirm by azo dye test)
	NO_2 is not present and add some more of the cooled solution of NaNO2.	4.An oily product separates or solution is cloudy 5.Deep orange red solid	4.a secondary amine may be present (confirm by liebermann test)
			5.tertiary aromatic amine may be present(confirm by neutralization)

• Carbylamine test :-

1. Chloroform reacts with alcoholic KOH to yield carbenes (strong electrophile). Carbenes then react with primary amine to give a dirty smell due to formation of isocyanide. This reaction is a test for primary amines secondary and tertiary amines do not give this test.

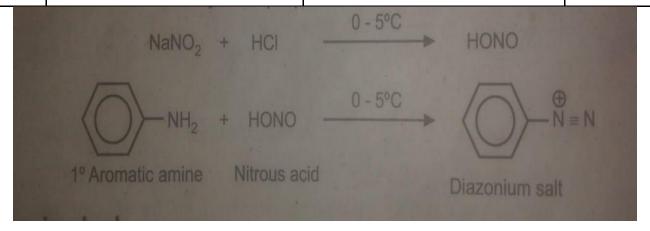
$$CHCl_3 + OH^- \rightarrow Cl-\underline{C} - Cl$$
 Carbene
RNH₂ + Cl-C**- $Cl \rightarrow R$ -N* $\equiv C$ isocyanide

Sr. No.	Test	Observation	Inference
1	0.2gm of sample+5ml of 10%HCL, shake	Clear solution. Reprecipitation or separation of oily layer after basification with sodium hydroxide	Amine present

• Diazotization test:-

Diazotization is an important reaction of 1° amines. In the diazotization process, the NH2 group is changed to a diazonium salt, R-N2+X-. This is done by reaction with nitrous acid (HNO2). The reactive salt is not usually isolated.

Sr. No.	Test	Observation	Inference
1 a)	0.001 gm sample + 10 drops conc. HCL, boil and cool in ice water + 4-5 drops cooled sol. of NaNO ₂ in water.	 If yellow solid separate out If red colour and on adding NaOH green solid is obtained. 	Secondary amine pre Tertiary amine presei
b)	If obs. 1) & 2) are absent then add the above solution dropwise into 10 drops of ice cold solution of Beta- naphthol in NaOH.	3. Orange dye stuff.	Primary amine prese



Solubility Test:

Amines are organic compounds which are basic in nature, so they dissolve in mineral acids like hydrochloric acid. But this test is not a confirmation test for amines

Litmus Test:

Amine are basic in nature. So it turns red litmus paper blue. This test is not a confirmation test for amines.

Azo dye test :

Both aliphatic and aromatic primary amines react with nitrous acid to give the corresponding diazonium ions. The aliphatic diazonium compounds are very unstable and convert into alcohol by liberating nitrogen gas. The aromatic diazonium salts are generally stable below 10 degree celsius. They react with phenol or beta naphthol to give a coupling product

$$C_6H_5NH_2 + HNO_2 \rightarrow C_6H_5-N=N^+Cl^-$$

Libermann Nitrosoamine test

The test is given by only secondary amine (both aliphatic and aromatic). Secondary amine is converted into nitroso amine by treating the amine with HNO2. On warming the phenol and conc. H2SO4 brown red colour is formed at first, which changes to blue then green. colour changes to red on dilution and further to greenish blue or violet on treatment with alkali

Ct 2° Amine N-Nitrosoamine Phenol NO
$$p$$
-Nitroso phenol p -Nitroso p

(lieberman Nitrosamine test)

	(lieberman Nitrosamine test)
	PAGE NO.
	Chemical Tests:-
	11-212
5	Nitrous Acid Test. N2 + Mix. of alcohols & alkenes.
10	CHC13+3KOH Carbylamine Test R-NC+3KC1+3H20. (Tsocyanide)
15	HONO. R-N=N Diazotization Diazonium Salt. Test.
250	HCI solubility Test. R-NH3CP
25	Litmus Test R-NH3+0H9

Question: 2. How will you distinguish primary, secondary and tertiary amines.

Answer: We can distinguish between primary, secondary and tertiary amines by following methods:

I. Hofmann Method

This involves the treatment with diethyl oxalate

- The primary amine forms a <u>dialkyloxamide</u>, which is a solid Ethyl oxalate + Primary amine → Oxamide (solid)
- The secondary amine forms a <u>dialkyloxamic</u> ester, which is an oily liquid.
 Ethyl oxalate + Secondary amine → Oxamic ester (liquid)
- 3. The tertiary amine does not react at all

II. Hinsberg Method

This involves the treatment with benzenesulfonyl chloride (Hinsberg reagent). The Solution is then made alkaline with aqueous NaOH.

- 1. The primary amine gives N-alkylbenzenesulfonates. This forms salt with NaOH, which is soluble in water.
- 2. The secondary amine gives N,N-dialkyl benzenesulfonamide. This does not forms salt with NaOH and is insoluble in alkaline solution.
- 3. The tertiary amine does not react with benzenesulfonyl chloride as they have no replaceable hydrogen.

<u>Sr. no.</u>	• <u>Test</u>	<u>Observation</u>	<u>Inference</u>
1.	<u>Libermann Nitrosoamine</u> test	1.A white yellow or brown ppt. Dissolve s in 5% NaOH solution & reprecipitated by 10% HCI.	
		2.The ppt. is insoluble in 5% NaOH solution.	2.Secondary amine is confirmed.
		3.A ppt. Or an oily layer is formed. The ppt. or oil is insoluble in NaOH solution but soluble in 10% HCl.	

N, N - dialkyl benzene Sulphonamide

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms./Mrs. Afavile Prajakta Nitin.	
Exam Seat No.	_
has satisfactorily carried out the Practical Work Prescribed by the	2
University of Pune for final Third Year B. Plancourse under Faculty	of
2. The maceutal Sciences III	
Natural Product Chemistry.	
(Subject) and this Journal represents his / her work within four walls of this college.	
Sim of O	
Sign. of Subject Incharge Principal	



SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

Name: A Jawil	e Prajakta Nitin Class: Third year exp	1
Roll No. : 01	Exam Seat No. :	

Year: 20 20 - 20 24.

		Year: 20 20 - 20 21.					
INDEX							
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher			
		Introduction	1-9				
1.	32/20	To perform extraction	10	Attur			
		of eugeno) from	12				
		clove oil	J				
	1 1						
2.	10 2 20	To Perform extraction	13-				
		of citraloil from.	14	/			
		citrus fruit					
3	-1 1						
5	17/2/20	To Perform extraction		Mur Jun			
		of volatile vasicine	17				
		from vacaka					
4	29/2/20	To Perform extraction	18				
	140	of Reserpine from					
		Rauwolfia	19				
		Ta vio on ia	-				
5	20/3/20	To Perform extraction	00-00-				
		of Glycerizine	21				
		from liquosice		/			
				+			

		INDEX		
г. No.,	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher
6.	16/3/20	To perform extraction	22-	reactier
		of sennoside from	2-3	
		senna leaves.		
	23/3/20	To ferform extraction	24-	
		and TLC Characteri-	26	
		sation of curcumin		
8.	0-1-1			
0.	30/3/20	To Perform Extraction	27-	
		of lawsone from	28	
		henna		
9	2-1-1			
	13 4 20	Estimation of Eugeno	1 29.	-
		by IP	30	
10	Oplala			Mary
	20 9/20	Estimation of menths	01 31-	
		by IP		
11	20/1			
	29/9/20	Estimation of Caffei	0 32	
		by IP	3	11
				1
Cortific	d that Mark the			
of	d that Mr. / Ms. / Mrs		Evam	oot No
UI		Class has satisfactorily completed the above term w	⊂xam ə	eat No.
			ork within	the four walls of this his

		INDEX		
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher
12	4/5/20	To perform isolation	34-	
		of extracted	36	
		Phytoconstituents by	-	
		UV VISIBLE SPECTROSCOPY		<u> </u>
		and IR		S/ 8/100
13	11/5/20	To Perform isolation	37-	
		of extracted phyto-	38	
		constituents by		
		UV spectrophotometry		
		and IR spectrophoto-		
		metry.		
			2.0	<i></i>
14	18/5/20	To perform isolation	39-	
		of extracted	40	
		phytoconstituent's		
		by uv visible specto-		
		photometry and		
		IR spectophotometry		
10	1 -1		(1)	
15	1/6/20	Estimation of caffein	417	. () (u ·
		by MPLC		7
1.	ol Class	To porform icolation	43-	
16	8/6/20	To perform isolation	99	
		of phytoconstituents by using colmo.		
		Chromato graphy		

_		INDEX	Page No.	Remarks 6 -
No	Date of Experiment			Remarks & Sign.
17	15/6/20	To determine melting	45-	
		point, solubility.	48	
		optical activity, Refra-		
		this index of		
		curcumin		
8	12620	To determine melting	49	X
		Point Solubility	51	
		optical activity,		
		Refractive indese		
		Of Eugenol.		
9	296 20	To determine	52-	
		melting point,	54	
		Solubility optical		
		activity Robinship		1
		index of caffeine.		
		or an range		
ertific	that No. (14			
ei une	d that Mr. / Ms. / Mrs.	Class has satisfactorily completed the above term work v		lo

Subject Incharge

Head of the Depart

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms./Mrs. Bhongale Samiksha
Sambhaji Exam Seat No.
has satisfactorily carried out the Practical Work Prescribed by the
University of Pune for Final 4t. Sem - III Course under Faculty of
Pharmaceutical Sciences in
Natural Drug Technology.
and this Journal represents his / her work within four walls of this college.
A luni
Principal Principal
Sign. of Subject Incharge



SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

Name: Bhongale	Samikshas Class:	Final year
Roll No. : 0 8	Exam Seat No. :	

Year: 20 20 - 20 1

INDEX					
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher	
1.	23/6/20	Introduction to		1	
		Aquevedic peep	1-3		
2.	30/6/20	To prepare triphala churm	3-4	Jun -	
3.	7/7/20	To Ptepase Btahmi Tailo	5-6	1	
4.	14/7/20	To evaluate mulato.			
		Kayam Chutna.	7.		
5.	21720	Hetbal Tablet.	8		
6.	28/4/20	Introduction to			
		Hetbal deug.	g-10		
7	48 20	To prepare ginger syrup.	11-13	2 Juni	
8.	11 820	To prepare digesti tablet	Ve 13		
		tablet.	12		

		INDEX		
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of
9.	18/8/20	To evaluate marketed		and of
		Prepriof Hetbal sytup	141	
10.	20/8/20	To evaluate marketed		A
		Prepn.	15	X Jun
11	1/9/20	Introduction to		
		Hetbal Cosmetics	16	
12.	8 9 20	To prepare f exaluate		
,		moistutising Cteam.	17/	<u></u>
13.	15)9/20	flait dye.	18	A lun
14.	12/9/20	To study of isola-		<i>A</i>
			19	
15.	29/9/20	To defermine free		1
		tadical.	0	
16.	6 10 no	Demostration 2	t	Mu
17 .	13/20/20 -	To prepare & evaluates	2	<u> </u>
Certified	that Mr. / Ms. / Mrs.	V	Seat No.	
of	Cla	ss has satisfactorily completed the above term work with	in the four w	alls of this institute

Head of the Department

Subject Incharge

2 No.	D. 15	INDEX		
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign, of Teacher
		cold cream.		
18.	20/10/20	To Prepare Demostrato	()	
		To prepare Demostration		
		activity.	23	
		,		
19.	27/20/20	To Prepare Demostrati		X
		To Prepare Demostration		
		activity.	24	
	1			
26.	3/10/20	To study preprior	25	
		bisdisel.		
-				
	1 5			
\				
				1

PUNE DISTRICT EDUCATION ASSOCIATION'S ETH GOVIND RACHIMATIC CAP

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

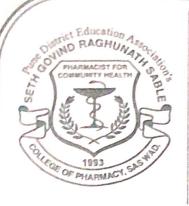
TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms. /Mrs. Nevase Shivanjali
Laxman. Exam Seat No. 14730
has satisfactorily carried out the Practical Work Prescribed by the
University of Pune for B. Pharmacy Course under Faculty of
Pharmaceutical Sciences in
Pharmacognosy & Phytochemistry I. (Subject)
and this Journal represents his / her work within four walls of this college.
Sour
Sign. of Subject Incharge Principal

Pharmacognosy & Phytochemistry-1



SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

Name: Mevase Shivanjali Laxneless: S.X B. Pharm

Roll No.: 75 Exam Seat No.: 14 73 0

Year: 20 20 -20 21

INDEX						
Sr. No	Date of Experiment	Page No. Remarks & Sign				
1.	1115/27	Entroduction of mum.	1-2			
		metre.				
2	17/5/2/	To determine the	3-6			
		Stomatal number of				
		different leaf drug.				
3.	24/5/21	To determine vein- islet number & vein	7-10	Sory		
v	1	islet remination.	constant and store lab on south of the			
4.	24/5/21	To determine length and width to crude drugs fibers	11-12-			
5.	07/6/21		13-17			
		crude drug				

		INDEX	Page No.	Remarks & Sign. of Teache
No	Date of Experiment		18-19	1
6.	7/6/21	To determine moisture		
	3	re content of given		
		coude drug sample		
		Analysis of crude	20-33	
7.	14/6/2/	drug by chemical		
		test	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8.	14/6/21	To determine foam	34-35	
	,	ing index of given		long
		(Tigunice)		3
9.	21/6/21	To determine swelli-	36-37	
		ng index of given		
		crude drug.	,	
-		J		
10	21/6/21		38-41	
		active value of cr-		
			PERMISSION OF COMMISSIONS AND SHEET	
Co	added that the state of	15 Nevas e si i i		

of S.Y.B.P.hann Class has satisfactorily completed the above term work within the four walls of this institute.

Subject Incharge

Head of the Department

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms. /Mrs. Temgin	e Pooja Suzesh
Exam Seat No.	2845
has satisfactorily carried out the Practical	l Work Prescribed by the
University of Pune for final yr. B. Phain	Course under Faculty of
Pharmaceutical Sciences in	
Medicinal Chemistry - III (Subject)	
and this Journal represents his / her work with	iin four walls of this college.
Samai	
Sign. of Subject Incharge	Principal



SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

Name : Temgire	Popula	Suresh	Class	final	41.8	Pharm
Roll No.: 67	J	Evam %	and No.	5em	<u>- VII</u>	
TOTAL TOTAL CONTRACTOR OF THE PARTY OF THE P		LAGIII O	pat MV	284	5	

Year: 20 20 -20 21

INDEX					
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teache	
1.	41812020	To demonstrate Gas Chromatography		Lawar	
2.	25 8 2020	To synthesized & characterized 4 - fluoroacetophenone		Sawar	
3.	81912020	To synthesized & characterized 2- methyl benzoate		Savar	
4-	22/9/2020	To synthesized & characterized 2 - methyl benzimidazole		Janar	
5	911012020	To synthesized 4 characterized caprolactum		Lawar	
6	6 N 2020	To synthesized & characterized Benzyl alcohol		Lawar	

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms./Mrs. Iemgin	re Pooja Syresh
Exam Seat No.	2845
has satisfactorily carried out the Practical	Work Prescribed by the
University of Pune for Pinal yr B. Pharma	Course under Faculty of
Pharmaceutical Sciences in	<u>- 111-</u>
Medicinal chemistry - IV (Subject)	
(Subject)	
and this Journal represents his / her work withi	in four walls of this college.
Sanor	
Sign. of Subject Incharge	Principal



Name ·	Temaire	Popia	Sureth	Class	Fina	yr B Phaim
	U	1			Cal	m - VIII

Roll No.: 67 Exam Seat No.: 56m

Year: 20 20 -20 21

INDEX						
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teache		
1	9 2 2021	To demonstrate High		Favar		
2	10 3 2021	Vaccum distillation To synthesized & characterized methyl salicylate		Ewar		
3	24 3 2021	To synthetized & characterized Antipyrine		Sawar		
4.	8 4 1 2 0 2 1	To synthetized & characterized 7 - Hydroxy -4 - methyl coumarin		Lawren		
5	29/4/2021	To synthesized & characterized thenyloin from Benzoln		Lamor		
	3/3/2021	To synthesized & characlerized Tsoniazid		E		
7.	10/5/202)	To synthesized & characterized 2 - Todo benzoic and				



Name: Kharade Amruta Vijay- class: S.Y.B. Pharm (III sem)

Roll No.: The Exam Seat No.: 201704 14679

Year: 2020 -20 2

Sr. No. Date of Experiment							
	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher			
1) 2	5/4/2021	Determination of particle size	1-3				
		& particle size distribution	12				
		using sieving method.					
		9 01011100.					
2)	5/4/2621	Determination of particle		All			
		size 1 anatists of particle	4-6	HALL.			
	THE DE	size & particle size distri-					
		hution using microscopic					
		method.	7				
(3)	12/4/2021						
	12/4/204	AMO TO HORNARDINA	7-9	10/ 80 10			
		density true density.					
		4 porosity.	/				
		Builton to mile barete	9 111	Halms Var			
4)	12/4/2021	Determine the angle	10-13				
		of response + influence					
		of lubricant on angle of					
	THE STATE OF STREET	response.		YAAA			
THE SAME	The second	THE TOTAL PROPERTY OF	20	1 134			
5)	19/4/2021	Determination of visco-	14-17	1			
		sity of liquid using					
		ostwald hiscometer.					
	To be were the	TO TO THE TENT	10.4				
1			THE PARTY				

/		INDEX	Page No.	Pomeda 2 ci
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teache
6)	2014/202)	Determination sediment-	18-20	
		ation volume with effect		
		of different suspending		
		agent ,		
7)	161612021	Determination sedimenta-		
		tion volume with effect	21-23	
		of different concentration		1 (19.
		of single suspending		
		agent.		
		a labiter to restructionented	1/198	1 25 1 / 1 10
8)	23/6/2021	Determination of viscosity	24-26	
		of semisolid by using		
		of semisolid by using Brookfield Viscometer.		
9)	23/6/262/	Determination of reaction	27-30	
		rate constant first order		
		THE TOTAL PROPERTY OF THE PROP		4/15/
10)	30/6/2021	Determination of reaction	31 - 32	1
	METER IN	rate constant second or-	31 34	
		der.		
4		In them in taggind it to		
1				

of SY. B. pharm Class has satisfactorily completed the above term work within the four walls of this institute.

Subject Incharge

Head of the Department

	NO STATE OF THE ST	INDEX		
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teach
1)	13/7/262	Accelerated stability studies To determine the shelf life of drug in dosage form at 60°c 4 80°c by accelerated test condition	35-37	
AL PA			414	
			19-10	Candas :



Name: Kharade	Amouta	Vijay	Class: S.Y.B	pharm (IVser	6
Dallas 71		77	4. 4		

Roll No.: 71 Exam Seat No.: 746784

Year: 20 20 - 20 21

INDEX						
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Size of Tour		
1)	13/8/2020	To determine Solubility of	r age No.	Remarks & Sign. of Teacher		
		Solid at different temp.	1-3			
		a different temp.				
م	10/8/2020	To determine pkg value of				
		Milen work and water	4-5			
	24	given weak acid a retic				
		acid by using pt meter:				
3)	17/8/2020	To determine partition	4	- AM		
		coefficient benzoic acid	6-8	1125		
	1919	between benzene 4 water				
And the second		services 4 water	558	2 101 2 101		
4)	04/8/2021	To determine the partition	0 11			
THE !		coefficient of iodine bet-	9-11			
		ween combon tetrachotide	1			
	1 1 1 1 3 2 4	f water.	*	161		
		S011802 80143 t olka				
5)	311812021	To determine the concent-	12-12	TW		
		ration of given solution		0/		
A STATE OF		of sodium chloride using	Later Lat	delle		
		phenol·water system		-1-1		
		3,150				
1						

		INDEX		
1	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher
Sr. No		Determination of surface		14911
6)	71912020	tension of given liquid	14-17	1
	1000000	by drop count & drop		
		weight method.		
		Weight meriod		
		Determination of HLB	18-21	
4)	2/19/2020	number of surfactants	100	12/8/1/11
		number of Sarracian method		
		by saponification method		1
		The same and the	T gee	el \$101 (a
		i i - et frondi-		
8>	28/9/2020	Determination of freandi-	22-26	
		ch 4 Langmair constant.		
		using activated thar-	- lugge	18177 16
		cod!		
		I have represent transported	27-28	
9)	5/10/2020	determination of critical	21 20	10
		micellar concentration	Lio	16 100 /11
	ee .	ot surfactant.		4/1/
		ted midel to tradition		
10)	12/10/2020	determination of stability	- 17 29	
		constanst 4 donor a ceeptor	2954	
		ratio of PABA cattine		10 10 1 16 16 16 16 16 16 16 16 16 16 16 16 1
	THE PARTY	Complehel		2172/

Certified that Mr. / Ms. / Mrs. Kharade Amouta Vijay Exam Seat No. 24704

of S.V. A pharm Class has satisfactorily completed the above term work within the four walls of this institute

Subject Incharge

Head of the Department

Pune District Education Association's

Seth Govind Raghunath Sable College of Pharmacy, Saswad

Participative Learning

Class: S.Y. B. Pharm.

Subject: Physical Pharmaceutics

Academic year: 2020-21

Name of activity: Group presentation

Sr. No.	Date	Group No and Roll No	Name of Topic
01	09/10/2020	Group I, Roll No: 1 to 10	Solubility
02	03/11/2020	Group II, Roll No: 11 to 20	Phase rule
03	10/11/2020	Group III, Roll No: 21 to 30	One and two component system
04	28/12/2020	Group IV, Roll No: 31 to 40	Three component system

Mr. Nilesh Bhosale

Dhosale



Name Ecologie Chetan Com F. Y. B. Phone Roll No. 32 Exam Seat No. 15668

Year 2024 -20 24

IN	DE	$\equiv \times$

St. No.	Date of Experiment	TITLE	Page No.	Remorts & Sign of Teacher
T	25 05 201	Introduction	1-7	7
2	1/06/21	Safety in laboratory	8-12	144
3	15/06/21	Caliberation of Ther	13-15	
		mometer		
4	20 06 21	Determination of	16-17	1
		melting Point		
5]	21/06/21	metermination of	18-18	- 44
	370	bailing Point)
6	74/06/21	Devicer Physical Control of	19-21	
		Distillation method		Sec.
7	24 06 21	Control of the Contro	27-74	72
=	2 2 2	given sample	25- 25	
81	13/07/21	Principles of chemical		750
7	100 A 100 A	synthesis of Benzanili	37-39	40
_ al	14/07/21	de from contine by		
		henzoylation reaction		
73	Interior	synthesis of p-brome	40-42	1/2
(8)	17/07/21	acetacilide From		

		INDEX	Page No.	Remarks & Sign
11	19/27/21	Demonstration of bo	all 43-48 edel	14
		Computer		
			4 18	
				No Local
Conti	ted that Mr. 1 May 1 May	Katare Chelan Somnatt	n. Exam Seat No.	14668
3.1	Subject Inc	Class has satisfactorily completed the above term	work within the for	r walls of this re



Name Wagh Phanam	G_ Own	
Roll No. 15.7		

Year: 2020 -2021

INDEX

-8 - 50	Introduction to puri- fication of organic Compound. To perform the many gladization of given crude product. To perform steam distillation of given	13-17	7
	To perform the many stallization of given coude product. To perform steam distillation of given	7	
	-stallization of given caude product. To perform steam distillation of given	7	
1-8-30	distillation of given	18-20	24
	Organic Compound.	of a	
\$ - 8 - 30	ration of Binary mixture.	21-27	hy
5-8-20	To determine Sapo- pification value of given oil Sample.	28-32	n
		sation of Binary mixture. 5-8-20 To determine Sapo- pification value of	salion of Binary mixture. 5-8-20 To determine Sapo-28-32 pification value of

		INDEX		
St. No.	Date of Experiment	TITLE	Perk	News 139: 41
6)	8-9-20¥	from aniline by benze oylation reaction	21:15	
#)		esynthesis of p-bromo- acetanilide from acetanilide by bromi- nation reaction	36-38	
8]		esynthesis of 2,4,6- tribrompaniline from aniline by bromination	39~41	N
9]	29-9-204	or synthesis benzoicularid from alkyl benzoate by hydrolysis reaction.	2-45	Ty_
[0]		to synthesize 0-Iodo 4 benzoic acid from 0-aminobenzoic acid by replacement reaction.	6-49	14_

of 94.0 pharms. Class has satisfactorily completed the above term work within the four walls of this mentions.

Subject Incharge

Head of the Department

INDEX			
No. Date of Experime	TITLE	Page No.	Remarks & Says
13-10-20	To synthesize Acetanilide from anilide from anilide by acetylation rea-	50-5A	
20-10-2	o To synthesize Dibenz- alacetone from ben- zaldehyde by claiser Shmidt reaction.		15_
3) 10-11-20	To synthesize 1- phenyl- azo-2-naphthal from Aniline by diazo- Coupling reaction.	57.	1

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify the	at Mr./Ms./Mrs. Pooja suresh Garad
A lamela	Exam Seat No. 2795
has satisfactorily	carried out the Practical Work Prescribed by the
University of Pune	efor Final year b. phann Course under Faculty of
Pharmaceutical Sci	ences in
and this Journal ren	(Subject) resents his / her work within four walls of this college.
and the general top	Tooms in y inc. work want of this contige.

Sign. of Subject Incharge

aude GB)

PRINCIPAL PRINCI

PUNE DISTRICTION ASSOCIATION'S SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAUTAL. PURANDHAR, DIST. PUNE 412 38



Name: Pooja Suresh Garud Class: Final ya hehara

Roll No.: 17 Exam Seat No.: 0795

Year: 20 20 -20 21

1			INDEX						
Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher						
22-3-21	Introduction to								
	validation of analytica		4						
	method.	1-2	+4						
	and market								
5-5-21	UV vis method for	-							
	validation of								
			Land of						
		3-5	th						
ARL Land	IN Company	2							
12-5-21	uv vis method valida-								
		0 10							
434 100		6-7	4						
19-5-21	BO HOIC method for								
		01-	19						
OKA A	10 mm	2-10	111						
26-6-21	20 1121 6 200 110 6								
20-5-11		1000	7						
	5-5-21	method. 3-5-21 UV vis method for Validation of estimation of paracetmol 12-5-21 UV vis method valida tion for the estimation of Rifapontine 19-5-21 RP HPIC method for estimation of paracetmol	validation of analytical method. S-5-21 UV vis method for Validation of estimation of paracetmol 3-5 12-5-21 UV vis method validation of extimation of extimation of extimation of extimation of extimation of extimation of paracetmol 8-10 26-5-21 RP HPLC method for						

20 noite mites

diciofenac

11-12 -

Sr. No	Date of Experimen	INDEX	Page No.	Remarks & Sign. of Tea
Sr. No) Date of Experimen			
6	12-6-71	Introduction to		
		suctural.	13	14
		elucidation		
-				
A	18-6-21	Flucidate the chemica	- Income	opGh sad
	-	structure from given		Jel
		data.	14-16	H
		trindorro so nertabilis		
8.	26-6-21	Elucidate chemicas		
		Structure from		4:
		given date	17-19	+4
		La rollingita		
a la	30-6-21	Aucidate chemica		
		Structure from given		
			An a	1.1
		data	10-27	++
		A REPUBLIC MARKET STATE OF THE SECOND STATE OF	* 1 7	-2-01 8
, ,	3-7-21/	Flucidate chemical	上	
_		Steucture from given		0
- 1	14 1 E/O	,	13-24	tell
		Land bookson and o		
				27.61
		20 milionis		
	J John	1007-03 07:00		

Certified that Mr. / Ms. / Mrs. Pooja Surscy Crocked Exam Seat No. 2795

of Cinal um B. Class has satisfactorily completed the above term work within the four walls of this institute. brown

Subject Incharge

Poons District Education Association

ansar

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



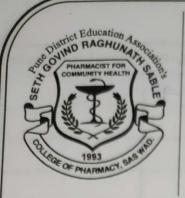
Certificate

This is t	to certify that	Mr./Ms./Mrs.	Patil Adit	i Deepak	
43	To make pira	Exam	Seat No. 385	6	
has sat	tisfactorily ca	rried out the	Practical Work	, Prescribed by th	ie
Univers	sity of Pune fo	r Final. Yr.	B. pharm	Course under Facult	yof
Pharma	ceutical Science	ces in			
	Pharmac	eutical Al	nalysis -V		
		, ,	ubject)		
and this	s Journal repre	sents his / her u	ork within four	walls of this college	

Sign. of Subject Incharge

PRINCIPAL

PUNE DISTRIPTION OF PHARMACY, SASWING AND HAR. DIST. PUNE-AUTO.



Name: Patil Aditi Deepak Class: Final-Yr-B-pharm

Roll No.: 57 Exam Seat No.: 3856

Year: 2020 -2021

INDEX

	1	INDEX	2	
Sr. No	Date of Experiment	TITLE VI VO BOSTO	Page No.	Remarks & Sign. of Teache
		pectroscopy	12	- 17
1	7-8-20	Introduction of	1	+4
	9- 0	simultaneous estimation	I	9-1-4-2
		bori	+	, ,
2.	14-8-20	To perform determination	2-3	+
	14 0	of conc. of Paracetamol	- 05	Pall a
		f caffeine from tablet	8	
		formulation by simultan	9	
		eous estimation	4	
		method by uv-vis	d	
		spectroscopy	2	
3.	21-8-20	To perform determination	4-5	#
		of conc. of Paracetamol		
		& Ibuprofen from	9	700
		Tablet Formulation by	a	
		simultaneous estimation	and the same	
	1300	method by uv-vis	4	ATT THE REAL PROPERTY.
		spectroscopy.		a Comment
		- FCC. COCPY		
				40
		St. bank		
	F - 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Total a color		//

/	NI NO A OLD	INDEX		
Sr. N	lo Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher
1 4	. 28-8-20	To perform determination	6-9	tal
		of given conc of Paracet		
		amol & Dicolofenac from		
		Tablet Formulation by		
		simultaneous estimation		
	o per tomore l'aste	method by uv-vis	1 690	unted Mg
		spectroscopy		
		to notion of	T O	1-8-6
5.	4-9-20	Introduction to Q-me	10	#
		thod		
	3 4	perform determination 2	T S	0 86-5
6.	11-9-20	To perform determination	11-12	#
		of concentration of	4	
		Paracetamol & Caffeine	57	
		From Tablet Formulation	3	
		by Q-method by UV-Vis	7	
		spectroscopy (1)	12	
		Specific Stopy		
7.	18-9-20	To perform determination	13-14	#
		of concentration of	0	
		'aracetamolf Ibuprofen	3	
		rom Tablet formulation		
		y q-method by uv-vis.	-	
		The state of the s	6	

Certified that Mr. / Ms. / Mrs. Patil Aditi Deepak Exam Seat No. 3856

of Fingl. Yr . B. pharm Class has satisfactorily completed the above term work within the four walls of this institute.

Subject Incharge

College of Pharmacy, Sau.

		INDEX		
Sr.	: No Date of Experime	ent TITLE	Page No.	Remarks & Sign. of Teacher
	8. 25-9-21	To perform determination of concentration of Paracetamon & Dichofena From Tablet formulation by Q-method by UV-Vis spectroscopy		tell
9.	9-10-20	Introduction to FIIR	17-18	#
10	10-10-20	To perform FTIR of given sample (glanine)	19	#
11	23-10-20	To perform FTIR of given sample (oxalic acid	20	+++
12	2-11-20	To perform FIIR of given sample (Nicotinamid	21	1
13.		To perform FTIR of given sample. (Paracetamol)	22	TH.
14.	3888 WILL	To perform Demonstration of Gas chromatography	23-24	
	frienthispet) an	the beet	emerani	

PUNE DISTRICT EDUCATION ASSOCIATION'S

SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY, SASWAD

TAL. PURANDAR, DIST. PUNE - 412 301.



Certificate

This is to certify that Mr./Ms./Mrs. Srushti shantilal
Phadtare Exam Seat No. 6376
has satisfactorily carried out the Practical Work Prescribed by the
University of Pune for T.Y. B. Pharm Course under Faculty of (Sem VI)
Pharmaceutical Sciences in
Pharmaceutical analysis-TV (Subject)
and this Journal represents his / her work within four walls of this college.

Sign. of Subject Incharge

PRINCIPAL
PUNE DISTRICT EDUCATION ASSOCIATION'S
SETH GOVIND RAGHUNATH SABLE
COLLEGE (Principalcy, SASWAL
TAL, PURANDHAR, DIST, PUNE 412



Name: Phadtare srushtisclass: Hoat year

Roll No. : 6 1 Exam Seat No. : 6 376

Year: 20 1 - 20 2 D

		INDEX	1	
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher
1.	06-01-20	Introduction to	1-3	til .
		chromatography	a	
		ven mix atomical	in	1.1
2 .	13-01-2020	petermination of Rf	4-5	199
		value of given		
		carbohydrate by	91	
		TIC. / saizatvi		
2	26-01-20	Seperation & determin	6-7	- fell
		of Rf values of	9 18	24-62
		mixture of carbo-	7	
		hydrote by TLC.	1	
		remoteoraphy	5	
4,	27-01-20	petermination of Rf	8-9	14
		value of given		
		amino acid by TLC.		
= 1	33-02-20	seperation 3 determ	7110	-VI tell
	The share made and a	of Rf values of		
		mixture of amino	1	2102130 14

acids by TLC

	THE PERSON NAMED IN	INDEX	Page No.	Remarks & Sign. of Teache
Sr. No	Date of Experiment	TITLE		Cal
6.	20-01-21	To Seperate &	12-13	TH
		determine et value		
		of gluen amino		
		acid by ascending		
		Paper chromatography		
	19-02-20			/0.
7.	27-01-21	To seperate & deter-	14-15	+4
		mine Rf value of		
7.1		given mix of amiro		
	18- 12-1	acid by ascending	alata	5-10-54 . c
		paper abromatography		
		CAlanine, Arginine,		
		Tyrosine)		
2. 0	302-21-	ro seperate 3 deter-	10-13	14
2	H-02-20	mine Rf values of	109/1	TIL
		nix of a.a by	17	
		adial paper		
-		hromatography		
	2 P 3	(A,AT)	100	-10-50 . 4
-		asup to sula		
		. Der pet benngin		
1		The state of the s		

Certified that Mr. / Ms. / Mrs. Phadtare Srushtis. Exam Seat No. 6976

of Class has satisfactorily completed the above term work within the four walls of this institute.

Subject Incharge

Head of the Department

Seth G I Raginulath Sable

College or Pharmacy Sable

INDEX					
Sr. No	Date of Experiment	TITLE	Page No.	Remarks & Sign. of Teacher	
9.0	9-03-20	To Seperate &	18-19	+	
		determine Rf			
		values of mix of			
		amino acids by			
		two dimensional			
		chromotography			
				or an alcoholic	
		MEG 2	- 1		
Alfan M	instructed in	PENNSON ATES SHOWS OF TESTER WORK TO SE			
			1	sal penduis	
	J. Berrowii	at to beat	- Parkers		

PUNE DISTRICT EDUCATION ASSOCIATION'S SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY SASWAD, DIST. PUNE

List of B.Pharm Students of Field Work

Year 2020-2021

Sr. N O	Roll No.	Student Name	Title	Place of Work	
1	1	Agawile Prajkta Nitin	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
2	2	Atre Prathmesh Suhas	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
3	3	Bankar Supriya Prakash	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
4	4	Bhagat Akash Sanjay	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
5	5	Bhalerao Shivkumar Shankarrao	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
6	6	Bhapkar Suraj Jaysing	Bacterial Vaccines Production and Quality Control Department	Serum Institute of India, Hadpsar	
7	7	Bhintade Komal Bhauso	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
8	8	Bhongale Samiksha Sambhaji	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
9	9	Bhosale Prashant Sanjay	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
10	10	Borade Gaurav Rajhans	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
11	11	Chavan Snehal Sopan	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
12	12	Dadas Tejashri Manik	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
13	13	Damare Bharat Rajendra	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
14	14	Divekar Poonam Jaydeep	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
15	15	Gaikwad Aditya Ankush	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	

16	16	Gaikwad Nishigndha Jagannath	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
17	17	Garud Pooja Suresh	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
18	18	Gaware Prasanna Kaluram	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
19	19	Ghule Kashinath Baliram	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
20	20	Gore Pratik Vilas	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
21	21	Gosavi Shubhangi Hanumant	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
22	22	Gugale Roshan Ajitkumar	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
23	23	Gulumkar Suraj Sanjay	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
24	24	Hole Pratibha Mahadev	Bacterial Vaccines Production and Quality Control Department	Serum Institute of India, Hadpsar
25	25	Jadhav Karishma Prabhakar	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
26	26	Jagadale Dipali Balasaheb	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
27	27	Jagtap Anuja Sambhaji	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
28	28	Jagtap Girish Gunwant	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
29	29	Jagtap Kalyani Vasant	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
30	30	Jagtap Shraddha Sandeep	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
31	31	Jamdar Pratiksha Gorakshnath	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
32	32	Kadam Kaustubh Jagannath	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
33	33	Kadari Hasan Khaja	Production Department	Inducare Pharma Pvt.Ltd, Jejuri
34	34	Kakade Tejas Rajaram	Bacterial Vaccines Production and Quality Control Department	Serum Institute of India, Hadpsar
35	35	Kale Aishwarya Tanaji	Production Department	Serum Institute of India, Hadpsar
36	36	Kale Kashmira Sanjay	Production Department	Inducare Pharma Pvt.Ltd, Jejuri

37	37	Kamble Jayesh Raju	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
38	38	Kannake Megha Dharmendra	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
39	39	Khaire Neha Satish	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
40	40	Khaladkar Prajakta Mahadev	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
41	41	Khandare Priya Gajendra	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
42	42	Khomane Bhagyashri Shrikrushna	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
43	43	Kshirsagar Chetan Ashok	Bacterial Vaccines Production and Quality Control Department	Serum Institute of India, Hadpsar	
44	44	Kshirsagar Nikita Arun	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
45	45	Kulkarni Vaishnav Govind	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
46	46	Kumbhar Pragati Ramesh	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
47	47	Kunjir Kamlesh Murlidhar	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
48	48	Lakade Pratik Bhagwan	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
49	49	Lasure Aarti Mahadev	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
50	50	Mane Aniket Bhimrao	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
51	51	Markad Karishma Uttam	Production Department	Halewood Laboratories Pvt.Ltd, Jejuri	
52	52	Mhaske Padmaja Kishor	Bacterial Vaccines Production and Quality Control Department	Serum Institute of India, Hadpsar	
53	53	Misal Poonam Balasaheb	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
54	54	Nanaware Komal Anil	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
55	55	Pardeshi Pavan Gulab	Production Department	Inducare Pharma Pvt.Ltd, Jejuri	
56	56	Patil Aditi Dipak	Ayurvedic Medicine Production and Quality Control Department	Saived Pharma, Jejuri	
57	57	Pawar Atharva	Production	Inducare Pharma Pvt.Ltd, Jejuri	

		Dnyaneshwar	Department		
			Ayurvedic Medicine		
58	58 58	Pawar Gauri Subhash	Production and	Saived Pharma, Jejuri	
56	36	Fawai Gauii Subilasii	Quality Control	Salveu Pilarilla, Jejuri	
			Department		
			Bacterial Vaccines		
59	59	Pawar Rutuja Raju	Production and	Serum Institute of India, Hadpsar	
39	39	Tawai Kutuja Kaju	Quality Control	Serum institute of maia, Haupsai	
			Department		
60	60	Phadtare Srushti	Production	Inducare Pharma Pvt.Ltd, Jejuri	
60	О	Shantilal	Department	inducare Pharma Pvt.Ltd, Jejuri	
61	61	Dilana Savali Anand	Production	Inducare Pharma Pvt.Ltd, Jejuri	
01	91 91	Pilane Sayali Anand	Department	inducare Pharma Pvt.Ltu, Jejuri	
62	62	Poman Sayli Ashok	Production	Inducare Pharma Pvt.Ltd, Jejuri	
02	02		Department	illuucare Filarilla FVt.Ltu, Jejuri	
63	62	63	Richa Ray	Production	Inducare Pharma Pvt.Ltd, Jejuri
03	03	Kicha Kay	Department	illuucare Filarilla FVt.Ltu, Jejuri	
64	64	Supekar Sahil Sanjay	Production	Inducare Pharma Pvt.Ltd, Jejuri	
04	04	Supekai Sailii Sailjay	Department	illuucare Filarilla FVt.Ltu, Jejuri	
65	65	Takavane Onkar Sanjay	Production	Inducare Pharma Pvt.Ltd, Jejuri	
03	3	Takavane Olikai Salijay	Department	inducare Friarma FVt.Ltd, Jejuri	
				Bacterial Vaccines	
66 66	Temgire Pooja Suresh	Production and	Serum Institute of India, Hadpsar		
00		Tenighe Pooja Sulesh	Quality Control	Serum mistitute of mula, maupsai	
			Department		
67	67	Wagh Rutuja Vitthal	Production	Inducare Pharma Pvt.Ltd, Jejuri	
07	07	wagii Kutuja vittiidi	Department	madeare Filarina FVt.Ltu, Jejun	

An

Industrial Training Report

Submitted to Savitribai Phule Pune University

In Partial fulfillment of Bachelor of Pharmacy
Degree under the faculty of Pharmaceutical science

INDU PHARMACEUTICALS PVT. LTD. MIDC, JEJURI

Tal-Purandar Dist-Pune 412303



SUBMITTED BY Miss. Bankar Supriya Prakash

PUNE DISTRICT EDUCATION ASSOCIATION'S
SETH GOVIND RAGHUNATH SABLE
COLLEGE OF PHARMACY SASWAD
TAL-PURANDAR DIST-PUNE 412301
(2020-21)



Inducare Pharma Pvt. Ltd.

Date: - 15/10/2021

CERTIFICATE

This is to certify MISS. SUPRIYA PRAKASH BANKAR student of SETH GOVIND RAGHUNATH SABLE COLLEGE OF PHARMACY SASWAD. She is STUDY IN B PHARMACY (FINAL YEAR) in our unit from 13/09/2021 to 12/10/2021 for the purpose of one month Industrial Training. She had taken training for 30 days in Production Unit and Q. C. section.

She had work in following section of our pharmacy during training.

- 1. Tablet Section
- 2. Liquid Section
- 3. Tail -Ghrit Section
- 4. Pak -Avaleha Section
- 5. Cream- Oinment Section
- 6. Powder (churna) Section
- 7. Asay Arishta Section
- 8. Extracts Section
- 9. Raw & Packing Material Section
- 10. Finished Goods Section

She found sincere & hardworking during him tenure of training.

For Inducare Pharma Pvt .Ltd.

Authorized Signatory

Magdale

Acknowledgement

This training is excellent opportunity for me to express my gratitude.

I sincerely thanks to all people who timely help me for completion of training. I would also like to thank for such a valuable guide and inspiration.

Thank you.

Yours Sincerely,

Bankar.

Miss. Bankar Supriya P.

Final yr. B.Pharm

INTRODUCTION

It is the leading brand in India in Pharmaceutical formulation has been treating millions for over 30 years. Inducare Pharma Products believes that what really matters is not so much success but the way in which it is achieved. Hence, they focus mainly on the quality of their products. All their products are WHO & GMP Certified and are made maintaining the most stringent quality standards.

According to the rigorous criteria of the pharmaceutical industry and sold in India and various countries across the world, Inducare Pharma products accompany patients throughout the world for a better management of patient treatments.

They are manufacturers of various dosage forms like oil capsules, liquid orals and food supplements proprietary ayurvedic formulations. Their capabilities and expertise over the years have resulted in continued demand for their patented and proprietary medicines. They have products various ranges like liquid oral powder, tablets, capsules.

Overview of industry

Inducare Pharma – Manufacturing of a wide range of pharmaceutical dosage forms, external preparation and pharmaceutical formulations. Established in 1 july 2016

Vision —To provide quality medicinal products and help one achieve healthier and happier life

Departments -

- Changing room.
- Manufacturing of Capsules.
- · QA/QC.
- · Warehouse.

- · Research and Development.
- Environment Health and Safety.

Annual Turnover - Rs. 5-15 Lacks.

Formulations – Tablets, Capsules, liquid oral and food

suppliments. Legal status of firm – Professional

Association.

Activities – Sport championship, Birthday celebration, Diwali, Navratri, Trip.

R & D — The research and development team is comprised of 10 Pharmacist, Scientists from different fields. Microbiologists, Chemists, Pharmacologists, Physicians and Business Administrators which from a part of Inducare Pharma

Raw Material

1. Purified Water:

Water is the basic need of this product. Therefore, it is very essential to provide good quality of water. Being river as a source of water, water treatment unit is established for the prevention of microbial and chemical impurities. Initial processing of water is done by alum dosing which is used to settle down the foreign particles. After that, chlorination is done and process water is further clarified by passing through sand filters. Passing through these filters adsorbs all organic matter through activated carbon filter. passed through ionic bed water is Potable demineralize(DM) it. Then DM water is used through cartridge filters and then from membrane filter by maintaining actual pressure. This purified water is used in the manufacturing process. From this stage, water is fed into overhead tank where it is heated up to 82±2°C. The water is continuously circulated using a loop system to reduce the bio burden level before being supplied to production area. Purified water is sampled from all locations as per sampling plan and analyzed for chemical and microbial quality.

2. Gelatin:

Gelatin is pure protein derived from bovine bones, cartilage tendon and other tissues. Much of the commercial gelatin today is a product obtained from bovine bones. It is extracted by partial hydrolysis of collagenous raw material from skin, white connective tissue and bone marrow of animals. It is linear polymer of amino acids. It contains specific amounts of 18 different amino acids which are linked to each other in a sequence of to form polypeptide chain of 1000 amino acid per chain. It is commonly used as a gelling agent which is then dissolved in hot water and cooled to form jelly. In pharmaceuticals, it used for manufacturing capsules, tablets as well as acoating for pills and tablets. It has not only pharmaceutical use but it is also used in food industry such as in desserts, salads thickening soaps. Also used as stabilizer in

confectionary and dairy products. Raw materials vendors of this company are Sterling India Pvt. Ltd, Nitta GelatinPvt. Ltd etc.

The gelatin is of two types:

- (a) Transmissible Spongiform Encephalopathy (TSE) Free
- (b) Bovine Spongiform Encephalopathy (BSE) Free Gelatine is ordered from only those countries who are free from the above two diseases.

3. Colours:

Synthetic food colours like FD&C Blue 2, Tartrazine, FD&C Yellow 10, Curcumin suspension, Carmosine etc. are used as colours. Titanium dioxide is used as pacifier i.e. to give shade to the final hard gelatin capsule.

4. Preservatives:

Methyl Paraben and Propyl Paraben are used as preservatives in the manufacture of empty hard gelatin capsules.

5. Additives:

)

)

Sodium Lauryl Sulphate is used as a surfactant and Silicon dioxide is used to improve theflowability of the capsules; also titanium dioxide used as opacifier.

The raw materials are received to the quarantine area.

The Goods Receipt Note(GRN) is prepared. Then it taken to the

Sampling area. Based on the batch, sample is collected. Formula for sampling is, $Sampling = \sqrt{n+1}$. If more than 26 containers are there from the total lot, then the total sampled batch is divided into three parts i.e. for Microbial Analysis, for Chemical Analysis and as a Control Sample. They are labelled with a sample written as SAMPLED on a white background label. The control sample is stored for 5+1 years i.e. 5 years' expiry date and 1 extra year for future investigations, if any.

Chemical Analysis

· Purified Water:

100ml sample (purified water) +10ml 1M H_2SO_4 + 0.1ml KMnO₄ + Heat on water bath for 15mins

No purple color and the test passes.
(If purple color persists, oxidizing substance is present and the test fails).

• Gelatin:

(a) Description:

It is whitish yellow in colour, in short threads or thick noodles appearance.

(b) Solubility:

It is Soluble in hot water. Also soluble in some polar organic solvents.

(c) Identification Test:

Copper Sulphate Test:

Dissolve 1 g of sample in CO2 free water at 55°C. + Add 0.05ml of CUSO4.5H2O + Add 0.5ml NaOH

Violet color

Other thing incorpore ge ty and appearance of solution.

(d) pH, Isoelectric pH and Conductivity:

For all the three above, 1 g of sample is added to a small bottle and 100 ml water is added toit. Soaked for 2 hours and

then a solution is made by dissolving it completely in thermostatic water bath at 60°C. This solution is later checked for its pH, isoelectric pH and conductivity. Two flasks are prepared and mixed; resin bed is added to one of the flask which is tested for isoelectric pH. Mixed resin bed activates the cations and anions in the solution. Limits: —

pH -5 to 6 at 25°C Isoelectric pH - 4.7 to 5.2 at 25°C Conductivity-1mS/cm at 35°C

(e) Viscosity:

6.67% W/v of gelatin solution is prepared by dissolving 7.5 g of gelatin in 105ml of water. Soaked for 2 hours and then the solution isprepared by dissolving it completely in thermostatic water bath at 60°C. Then viscosity is checked by using Ostwald's viscometer which is kept at constant temperature water bath at 60°C. After 17 hoursviscosity is again checked and percentage fall in viscosity w.r.t initial viscosity is checked.

(f) Bloom Strength:

6.67% W/v of gelatin solution is prepared by dissolving 7.5 g of gelatin in 105ml of water. Soaked for 2 hours and then the solution isprepared by dissolving it completely in thermostatic water bath at 60°C. Then it is matured in thermostatic water bath at 10°C for 17 hours. To check bloom strength of gelatin LFRA ANALYSER is used. The load measured by the piston at the moment represents the bloom strength. The normal bloom strength is 195 to 230.

(g) Hydrogen Peroxide (H2O2)

20g of gelatin is taken in 80ml of water. It is soaked for 2 hours and then solution is prepared by dissolving it completely in thermostatic water bath at 60° C. $H_{2}O_{2}$ strip is dipped in this solution. $H_{2}O_{2}$ strip ranges from 0 to 25. Value for gelatin is 0 i.e. the strip remains colourless if $H_{2}O_{2}$ is absent. It turns blue if $H_{2}O_{2}$ is present. Both the strips are compared for their colour.

1g of gelatinis weighed and taken into the LOD containers and kept in the hot air oven for 4 hours at 105°C. The weight of the capsules is measured at the end of the process. This test is used to determine the moisture content.

(e) Sulphated Ash:

1 g of sample is ignited by incorporating 1ml of conc. H_2SO_4 . The weight is checked and compared with the limits from IP.

Other tests are:

Grease content: It should not be more than 1500 ppm. Particle size is also checked using sieve. Four sieves are used and the limits are compared.

(f) Sulphur Dioxide Test for Gelatin:

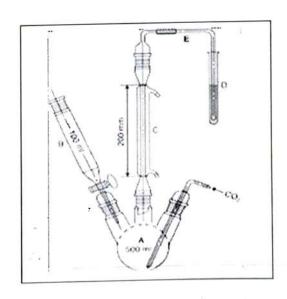
Arrange the apparatus for this test as given below. Add 150 ml of purified water into the flask and pass CO2 gas through the whole system for 15 mins at the rate of 100 ml/min.

To 10 ml of Hydrogen Peroxide (3%) i.e 5 ml in 50 ml water add 2-3 drops of Bromophenol Blue indicator and add small amount of 0.1 M NaOH until the blue colour changes to violet.

Further, add 25 gmgelatin to the flask without interruption and immediately add 80 ml dil. HCl to it.

Heat for 1 hour at 70° C. After the process is complete, open the tap of the funnel, stop the flow of CO_2 and also stop heating and cooling the water. Transfer the contents of the test tube with the aid of little water to 200 ml wide necked conical flask. Heat on water bath for 15 mins and allow to cool.

Add 0.1 ml of Bromophenol Blue in alcohol (20% v/v) and titrate with titrant until colour changes from yellow to violet blue.



- (g) Hydrogen Peroxide (H2O2) test:
- 20 gmgelatin + 80 ml Purified Water + Soak for 2 hours + Heat in water bath for complete dissolution +Dip the H₂O₂ Strip

If no change in colour is seen, then the sample is passed. Blue colour indicates the presence of H₂O₂.

Finished Product :

(a) Description:

Cap and body. The cap overlap maintains a tight friction.

(b) Capsule colour:

Coloured/uncoloured identical or different transparent opaque, partially or completely printed or unprinted.

(c) Print matter:

Large, text, symbol on cap/body with coloured printing ink.

(d) Test for Gelatin:

Tannic acid and Picric acid solutions are used for identification of gelatin in the capsules. 0.5 g of picric acid is dissolved in 50ml of water and 2.5 g of tannic acid is dissolved into 25 ml of water. Both the solutions are added to the capsule solution and the test is said to be positive after appearance of ppt in both the solutions.

(e) Average weight:

Measure 100 capsules and determine their weight. The average weight is calculates by the formula: $AW = Weight \times 1000 / 100$.

(f) Loss on drying:

1 g of capsules are weighed into a dish and kept into the hot air oven at 105°C for 4 hours. The percentage loss on drying is calculated by the formula:

% LOD = Loss in weight of capsules \times 100 / Initial wt. of capsules taken.

(g) Disintegration time:

The calculation of disintegration time involves the apparatus consisting of two beakers consisting of purified water at 37 ±2°Cupto a certain level. The beakers are automatically moved in an up and down manner. Apparatus A is used for capsules NMT 18 mm long. Apparatus B is used for large size capsules i.e sizes including #2, 1, 0. The D.T should not be more than 15 mins.

(h) Odour:

Some amount of capsules are put in amber coloured bottles and kept in oven for 24 hours. The capsules should not develop foul odour.

LIST OF PRODUCTS

Gomutra Ghan Capsules

Inducare Gomutra Ghan Plus

Capsules Directions for

use; shake before ues

Inducare Saj Syrup:

Inducare Saj Syrup for Hyperacidity, Constipation, Indigestion and Gases

Chyawanprash Avaleha:

Imunuty Booster

Vataril Tablets:

Joint / Body pain

Anocare Tablets:

Piles

Inferto Tablet:

Female infertility

Aawin Tables

Arthritis

BSL-150 Granules

Diabetes

BSL-150 Tablets

Diabetes

Production Department

DM Water Plant :-

In this department the purification water takes place. The filtration of water is done through different filters. Then this purified water is circulated different departments or sections. After the purification of water, the sanitization of water is also done with the help of hydrogen peroxide and hot water.

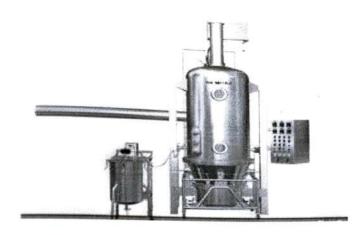
Different Sections in Production Department:

- Ayurvedic Liquid Manufacturing section
- Ayurvedic Liquid Filling Section
- · food suppliment Preparation Manufacturing and Filling Section
- Steroidal External Preparation Manufacturing and Filling Section

TABLET DEPARTMENT

Different sections in Tablet Department are:

- > Tablet Granulation Section
- > Tablet Compression Section
 - > IPQC Section
 - > Tablet Coating Section
 - > Tablet Inspection Section
 - 1. Tablet Granulation Section



.

Fluid Bed Processor Machines of this department:

- Fluid Bed Processor: Make Chamunda
- Multi Mill: Make Gansons
- Octagonal Blender: Make Chamunda
- Vibro Sifter

2. Tablet Compression

Section: Machine:

- 16 Station Single Rotary Compression Machine:
 Make –
 Adept engg
- 27 Station Double Rotary Compression Machine:
 Make –
 Adept engg

3. IPQC Section:

Dissolution Apparatus Friability

Apparatus Machine:

- <u>Digital Tablet Hardness Tester Apparatus</u>: Make –
 Veego
- <u>Digital Tablet Friability Tester</u>: Make Veego
- Vernier Calliper: Make Mitu Toyo
- Tablet Disintegration Test Apparatus: Make Veego

4. Tablet Coating Section:

- Ducting for Exhaust: Make NSC
 - <u>Tablet Coating Machine With 36 inch Pan</u>: Make –
 Cadmac

CAPSULE DEPARTMENT

Instrumen

ts:

1. SS-Pam

Capsule:

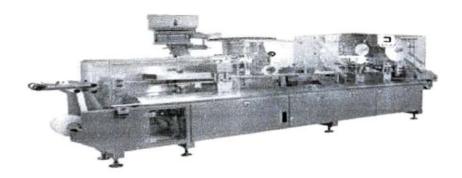
Make -

Pam.

2. Roto Cube Blender:

Make - Universal.

PACKAGING DEPARTMENT



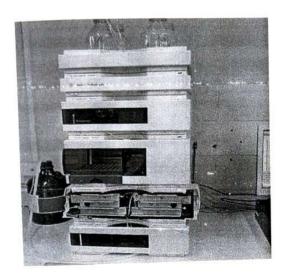
Blister Packaging Machine



1.Primary packaging.

QAY_____

ASSACE____



HPLC

QC — Involved in analysis of compounds.

QA – Involved in documentation and

developments. <u>Instruments used in</u>

QA/QC department:

- HPLC (High Performance Liquid Chromatography): Make-Hitachi ilite.
- HPLC Advanced:
 Make Schimadzu prominence.