Practical Record Book

For

Subject – Dravyaguna Vigyana

Year – 2nd year B.A.M.S.

(Name of the College)

(Approved by –National Commission for Indian System of Medicines, New Delhi &

Name of the University)

Name of the department

Batch- _____

Certificate

This is to certify that, Mr. / Ms. _____, Enrollment Number- _____ has satisfactorily completed the course of Practicals in (Subject Name) prescribed by the (Name of University) as a part of the Second Professional B.A.M.S. Course.

Examination Seat No.: _____

Date of Examination- _____

Sign. Of Internal Examiner-_____

Sign. Of External Examiner-_____

Sign. of Teacher

Sign. of H.O.D.

Index

Sl.No	PARTICULARS	Page Number
1	**Assessment and understanding the relation between Parthivatwa & subjective objective parametric tests**	
2	**Assessment of objective parametric measures of Guna**	
3	**Assessment of Rasa by based on classical symptoms for each rasa dravyas**	
4	**Comparative organoleptic and macroscopic examination**	
5	**Microscopic Identification of genuine and adulterated drug**	
6	**Demonstration of skills to identify the medicinal plants in the college garden**	
7	**Out Campus Visit**	
8	**Selection of Ekala dravya prayoga in various clinical conditions**	
9	**Physicochemical study of medicinal plant**	
10	**Preliminary phytochemical study medicinal plant**	
11	**TLC technique**	
12	**Demonstration of skills to identify the medicinal plants in the college garden**	
13	**Out Campus Visit**	
14	**Selection of Ekala dravya prayoga in various clinical conditions**	
15	**Different Cultivation technique including methods mentioned in Vrikshayurveda**	
16	**Exercise on Network pharmacology**	

17	**Preparations of digital herbarium**	
18	**Demonstration of skills to identify the medicinal plants in the college garden**	
19	**Out Campus Visit**	
20	**Selection of Ekala dravya prayoga in various clinical conditions**	

Practical no 1. **Date:-**

1.1Name of the Practical – Assessment and Understanding the relation between Parthivatwa & subjective/ objective parametric tests

Principle:-Bulk density is more in Parthiva Dravyas as compared to other Mahabhutas

Dravyas to be used -

Drugs	Asthishrnkhala	Sariva	Vidari	Maricha	Shatavari	Jambu	Godhuma	Ushira
Botanical Name								
Part used								

1.1 a) Name of the Test –Bulk Density

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-

Formula- BD = Wt of sample / Volume gm/cc

Inference:

Conclusion:

Remarks:

Student's signature **Teacher's signature**

1.1.b) Name of the Test Specific gravity (Solid)
Principle – Specific gravity is more in Parthiva Dravyas as compared to other Mahabhutas

Aim & Objective:

Materials:

Method/Procedure:

Observations / Calculations:

S. No.	Observation Number	1	2	3
1 2 3 4	Weight of density bottle (W_1 g) Weight of density bottle + Dry drug (W_2 g) Weight of bottle + dry drug + water at temperature T_x^0 C (W_3 g) Weight of bottle + water (W_4 g) at temperature T_x^0 C			
	Specific gravity G at T_x^0 C			
	Average specific gravity at T_x^0 C			

CALCULATIONS: Specific gravity of solid drug = Density of water at 27 C/Weight of water of equal volume

$= (W_2-W_1)/(W_4-W_1)-(W_3-W_2)$

$= (W_2-W_1)/(W_2-W_1)-(W_3-W_4)$

Conclusion -

Interpretation-

Student's signature Teacher's signature

Results:

Sr. No.	Particular	Asthishrnkhala	Sariva	Vidari	Maricha	Shatavari	Jambu	Godhuma	Ushira
a	**Density (Bulk)**								
b	**Specific Gravity Solid**								

Conclusions-

Student's signature

Teacher's signature

Practical no 1 **Date:-**

1.2 Name of the Practical - Assessment and Understanding the relation between Jaliyatwa & subjective/ objective parametric tests

Principle:- Viscosity and Jaliyatwa is inversely proportional

Dravyas to be used -

Drugs	**Kumari**	**Vidari**	**Sariva**	**Shunthi**	**Ikshu**	**Usheera**	**Kamala**	**Apamarga**
Botanical Name								
Part used								

1.2.a) Name of the test – Viscosity

Aim & Objective-

Materials-

Method/Procedure-

Observations -
Time required for standard to falling down E to F– C
Time required for sample to falling down E to F -t

Calculations-Kinematic viscosity =V=1/C*t

Interpretation-

Student's signature Teacher's signature

1.2.b) Name of the Test- Specific gravity (Liquid)

Principle :- As Specific Gravity increases Jaliyatwa decreases

Aim & Objective:

Materials:

Method/Procedure:

Observations / Calculations:

S. No.	Observation Number	Result
1 2 3	Weight of density bottle (W_1 g) Weight of density bottle + water (W_2 g) Weight of bottle + sample at same temperature (W_3 g)	
	W_3-W_1/W_2-W_1	
	Average specific gravity at T_x^0 C	

Conclusion -

Interpretation-

Student's signature **Teacher's signature**

1.2.c) Name of the test -Moisture content

Principle:- As moisture content increases Jaliyatwa increases

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of empty evaporating dish–A
2) Weight of evaporating dish with sample –B

3) Weight of evaporating dish with sample after heating –C
4)Weight of evaporating dish with sample after heating –C_1
This process should be repeated till two consecutive weights will be equal

Calculations-

$$\frac{B-C_1}{B-A} \times 100$$

Conclusion-

Student's signature

Teacher's signature

Details:

Sr. No.	Particular	Kumari	Vidari	Sariva	Shunthi	Ikshu	Usheera	Kamala	Apamarga
A	Viscosity								
B	Specific Gravity								
C	Moisture content								

Practical no 1. **Date:-**

1.3 Name of the Practical - Assessment and Understanding the relation between Aagneyatwa & subjective/ objective parametric tests

Principle:- Extreme acidity and alkalinity showing more Aagneyatwa

Dravyas to be used-

Drugs	**Shunthi**	**Shatavari**	**Maricha**	**Dhataki**	**Chitraka**	**Gokhura**	**Hingu**	**Chandana**
Botanical Name								
Part used								

1.3.a) Name of the test -pH
Aim & Objective-

Method/Procedure-

Observation-

Conclusion-

Student's signature Teacher's signature

b) Name of the test -Moisture content

Principle: - Moisture content is less in Aagneya dravyas as compared to other Mahabhutas

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of empty evaporating dish –A

2) Weight of evaporating dish with sample –B

3) Weight of evaporating dish with sample after heating –C

4) Weight of evaporating dish with sample after heating –C_1

This process should be repeated till two consecutive weights will be equal

Calculations-

$$\frac{B - C_1}{B - A} \times 100$$

Conclusion-

Student's signature Teacher's signature

Reports-

Sr. No.	Particular	Shunthi	Shatavari	Maricha	Dhataki	Chitraka	Gokhura	Hingu	Chandana
a	pH								
b	Moisture content								

Interpretation –

Student's signature

Teacher's signature

Practical no 1. **Date:-**

1.4 Assessment and Understanding the relation between Vayaviytwa & subjective/ objective parametric tests

Principle:- More the Fat content Less the Vayaviyatwa

Dravyas to be used-

Drugs	**Usheera**	**Ashwagandha**	**Nimba**	**Vidari**	**Khadira**	**Tila**	**Jambu**	**Kapikacchu**
Botanical Name								
Part used								

a) Name of the test -Fat content

Aim & Objective-

Method/Procedure-

Observation-

1. Weight of sample-
2. Weight of the empty Evaporating dish
3. Weight of Evaporating dish + dried extract

Calculations –

Percentage of fat content value= weight of Oil /Total weight of sample taken X 100

Conclusion-

Student's signature Teacher's signature

b) Name of the Test- Specific gravity (Liquid)

Principle: Specific gravity is less when compared with Parthiva Dravya

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-

S. No.	Observation Number	Result
1 2 3	Weight of density bottle (W_1 g) Weight of density bottle + water (W_2 g) Weight of bottle + sample at same temperature (W_3 g)	
	W_3-W_1/W_2-W_1	
	Average specific gravity at T_x^0 C	

Conclusion -

Interpretation-

Student's signature **Teacher's signature**

d) Name of the Test –Bulk Density

Principle:- Bulk density is less when compared with Prathiva dravya

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-

Formula- BD = Wt of sample / Volume gm/cc

Inference:

Conclusion:

Remarks:

Student's signature **Teacher's signature**

Reports-

Sr. No.	Particular	Ushira	Ashwagandha	Nimba	Vidari	Khadira	Tila	Jambu	Kapikacchu
A	Fat Content								
B	Specific Gravity (Liquid)								
C	Density-Bulk								

Interpretation-

Student's signature **Teacher's signature**

Practical no 1. **Date:-**

1.5 Name of the Practical - Assessment and Understanding the relation between Aakashiyatwa & subjective/ objective parametric tests

Bulk Density is less when compared with Vayaviya Dravya.

Dravyas to be used-

Drugs	**Usheera**	**Kumari**	**Apamarga**	**Jeeraka**	**Jatamansi**
Botanical Name					
Part used					

1.5 a) **Name of the Test –Bulk Density**

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-

Formula- BD = Wt of sample / Volume gm/cc

Inference:

Conclusion:

Remarks:

Student's signature **Teacher's signature**

Reports-

Sr. No.	Particular	Usheera	Kumari	Apamarga	Jeeraka	Jatamansi
A	Density Bulk					

Interpretation-

Student's signature **Teacher's signature**

Practical no 2 **Date:-**

Name of the Practical - Assessment of objective parametric measures of Guna

2.1- Assessment of objective parametric measures Guru & Laghu Guna

Principle- Bulk density is directly proportional to physical Guruta & Laghuta

Drugs	Shatavari	Bala	Yava	Dhanyaka
Botanical Name				
Part used				

a) Name of the Test –Bulk Density

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-

Formula- BD = Wt of sample / Volume gm/cc

Inference:

Conclusion:

Remarks:

Student's signature **Teacher's signature**

b) Name of the Test Specific gravity (Solid)

Principle:- Specific Gravity directly proportional to Physical Guruta & Laghuta

Aim & Objective:

Materials:

Method/Procedure:

Observations / Calculations:

S. No.	Observation Number	1	2	3
1 2 3 4	Weight of density bottle (W_1 g) Weight of density bottle + Dry drug (W_2 g) Weight of bottle + dry drug + water at temperature T_x^0 C (W_3 g) Weight of bottle + water (W_4 g) at temperature T_x^0 C			
	Specific gravity G at T_x^0 C			
	Average specific gravity at T_x^0 C			

CALCULATIONS: Specific gravity of solid drug = Density of water at 27 C/Weight of water of equal volume

$= (W_2-W_1)/(W_4-W_1)-(W_3-W_2)$

$= (W_2-W_1)/(W_2-W_1)-(W_3-W_4)$

Conclusion -

Interpretation-

Student's signature Teacher's signature

c) Name of the Test Specific gravity (Liquid)

Aim & Objective:

Materials:

Method/Procedure:

Observations / Calculations:

S. No.	Observation Number	Result
1 2 3	Weight of density bottle (W_1 g) Weight of density bottle + water (W_2 g) Weight of bottle + sample at same temperature (W_3 g)	
	W_3-W_1/W_2-W_1	
	Average specific gravity at T_x^0 C	

Conclusion -

Interpretation-

Student's signature Teacher's signature

Results -

Sr. No.	Particular	Shatavari	Bala	Yava	Dhanyaka
a	Density (Bulk)				
b	Specific Gravity Liquid				
c	Specific Gravity Solid				

Date:-

2.2 -Name of the Practical - Assessment of objective parametric measures of Snigdha and Ruksha guna drugs

Principle:- Fat Content directly proportional to physical Snigdhata & Rukshata

Drugs	Tila	Eranda	Kulattha	vidanga
Botanical Name				
Part used				

a) Name of the test -Fat content
Aim & Objective-

Method/Procedure-

Observation-

1. Weight of sample-
2. Weight of the empty Evaporating dish
3. Weight of Evaporating dish + dried extract

Calculations –

Percentage of fat content value= weight of Oil /Total weight of sample taken X 100

Conclusion-

Student's signature

Teacher's signature

b) Name of the test -Moisture content

Principle – Moisture content is directly proportional to Snigdhata & Rukshata

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of empty evaporating dish –A

2) Weight of evaporating dish with sample –B

3) Weight of evaporating dish with sample after heating –C

4) Weight of evaporating dish with sample after heating –C_1

This process should be repeated till two consecutive weights will be equal

Calculations-

$$\frac{B - C_1}{B - A} \times 100$$

Conclusion-

Student's signature

Teacher's signature

c) Name of the test –Swelling index

Principle:- Swelling index is directly proportional to Snigdhata and Rukshata

Aim & Objective-

Materials-

Method/Procedure-

Observations-

Calculation

Swelling index percentage = (Vw-Vk)/Vk*100
Vw : Final drug weight after 24hours
Vk: Initial weight in water

Inference:

Conclusion:

Student's signature

Teacher's signature

Results -

Sr. No.	Particular	Tila	Eranda	Kulattha	Vidanga
a	Fat Content				
b	Moisture Content				
c	Swelling Index				

Practical no 3 **Date:-**

Name of the Practical - Assessment of Rasa based on classical symptoms for each rasa dravyas

Drugs	Madhura	Amla	Lavana	Katu	Tikta	Kashaya
Sanskrit Name						
Botanical Name						
Part used						

Aim & Objective-

Materials-

Method/Procedure-

Observations

Standard Protocol for Determination of Rasa (Taste) Involving Human Subjects

Name of the Volunteer: Age: Date:

PART-A

1. What did you feel in the oral cavity after tasting the sample? (tick one or more option)

Sr. no	Question	Uttam (Highest degree) Score - 3	Madhyam (Medium Degree) Score - 2	Avara (Lowest Degree) Score - 1
1	Coating of the oral cavity			
2	Unctuous/Slimy feeling			
3	Softness of the mouth			
4	Cleansing of mouth			
5	Burning sensation in mouth, throat, chest - After sometime			
6	Disperse quickly			
7	Burning sensation in mouth, forehead			
8	Burning sensation in mouth, forehead, whole body –immediate			
9	pricking sensation on tongue			
10	Feeling of temporary loss of taste			
11	Not pleasant to Tongue			
12	Dryness of mouth			
13	Stiffness of the tongue			

2. What did you feel in mind / brain after tasting the sample?

SI No	Question	Uttam (Highest degree) Score - 3	Madhyam (Medium Degree) Score - 2	Avara (Lowest Degree) Score - 1

1.	Sense of satisfaction			
2.	Pleasant feeling			
3.	Developed likingness in food			
4.	Mental Agitation			

3. Which kind of effect you are experiencing?

SI No	Question	Uttam (Highest degree) Score - 3	Madhyam (Medium Degree) Score - 2	Avara (Lowest Degree) Score - 1
1.	Perspiration/ Sweating			
2.	Discharge from Nose			
3.	Lacrimation/ Tears in eyes			
4.	Stiffness of Head			
5.	Choking feeling in throat / chest Region			

4. What reflective effect you observed?

SI No	Question	Uttam (Highest degree) Score - 3	Madhyam (Medium Degree) Score - 2	Avara (Lowest Degree) Score - 1
1.	Increased Salivation			
2.	Tingling sensation in teeth			
3.	Eye and eyebrow constriction			
4.	Feeling of Goosebumps			

5. What is the Predominant taste of drug/ which taste you felt the most after immediate contact?

SlNo	Option	Score 1-6- depending on predominance of taste
1.	Madhura	

2.	Amla	
3.	Lavana	
4.	Katu	
5.	Tikta	
6.	Kashaya	

Teacher's Signature

Student's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

a. Root drugs

Drugs	Botanical Name	Family	Synonyms
Ashwagandha			
Chitraka			
Manjishtha			
Musta			
Shatavari			
Vatsanabha			
Yashtimadhu			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Ashwagandha	**Substitute/Adulterant**
Chitraka	**Substitute/Adulterant**
Manjistha	**Substitutes/Adulterants**
Musta	**Substitute/Adulterant**

Shatavari	**Substitute/Adulterant**
Vatsanabha	**Substitute/Adulterant**

Yashtimadhu	Substitute/Adulterant

Report-

Drugs	**Shabda (Fracture)**	**Sparsha (Touch)**	**Roopa (Colour, Size, Shape)**	**Gandha (Odour)**
Ashwagandha				
Substitute/Adulterant				
Chitraka				
Substitute/Adulterant				
Manjishtha				
Substitute/Adulterant				
Musta				
Substitute/Adulterant				
Shatavari				
Substitute/Adulterant				
Vatsanabha				
Substitute/Adulterant				
Yashtimadhu				
Substitute/Adulterant				

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

b. Rhizome drugs

Drugs	Botanical Name	Family	Synonyms
Haridra			
Kutuki			
Shunthi			
Vacha			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Haridra	**Substitute/Adulterant**
Kutuki	**Substitute/Adulterant**
Shunthi	**Substitutes/Adulterants**
Vacha	**Substitute/Adulterant**

Report-

Drugs	**Shabda (Fracture)**	**Sparsha (Touch)**	**Roopa (Colour, Size, Shape)**	**Gandha (Odour)**
Haridra				
Substitute/Adulterant				
Kutuki				
Substitute/Adulterant				
Shunthi				
Substitute/Adulterant				
Vacha				
Substitute/Adulterant				

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

c. Stem drugs

Drugs	Botanical Name	Family	Synonyms
Asthishunkhala			
Guduchi			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Asthishrunkhala	**Substitute/Adulterant**
Guduchi	**Substitute/Adulterant**

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Asthishrukhala					
Substitute/Adulterant					
Guduchi					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

d. Bark drugs

Drugs	Botanical Name	Family	Synonyms
Arjuna			
Ashoka			
Kutaja			
Nimba			
Twaka			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Arjuna	**Substitute/Adulterant**
Ashoka	**Substitute/Adulterant**
Kutaja	**Substitutes/Adulterants**
Nimba	**Substitute/Adulterant**

Twaka	**Substitute/Adulterant**

Report-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Arjuna					
Substitute/Adulterant					
Ashoka					
Substitute/Adulterant					
Kutaja					
Substitute/Adulterant					
Nimba					
Substitute/Adulterant					
Twaka					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

e. Heart wood drugs

Drugs	Botanical Name	Family	Synonyms
Beejaka			
Chandana			
Khadira			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Beejaka	**Substitute/Adulterant**
Chandana	**Substitute/Adulterant**
Khadira	**Substitute/Adulterant**

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Beejaka					
Substitute/Adulterant					
Chandana					
Substitute/Adulterant					
Khadira					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

f. Leaf drugs

Drugs	Botanical Name	Family	Synonyms
Kumari			
Meshshrungi			
Vasa			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Kumari	**Substitute/Adulterant**
Meshshrungi	**Substitute/Adulterant**
Vasa	**Substitute/Adulterant**

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Kumari					
Substitute/Adulterant					
Meshashrungi					
Substitute/Adulterant					
Vasa					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

g. Flower drugs

Drugs	Botanical Name	Family	Synonyms
Dhataki			
Kunkuma			
Lavanga			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Dhataki	**Substitute/Adulterant**
Kunkuma	**Substitute/Adulterant**
Lavanga	**Substitute/Adulterant**

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Dhataki					
Substitute/Adulterant					
Kunkuma					
Substitute/Adulterant					
Lavanga					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

h. Fruit drugs

Drugs	Botanical Name	Family	Synonyms
Aamalaki			
Aaragwadha			
Bhallataka			
Bibhitaki			
Gokshura			
Haritaki			
Madanphala			
Maricha			
Pippali			
Vidanga			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Aamalaki	**Substitute/Adulterant**
Aaragwadha	**Substitute/Adulterant**
Bhallataka	**Substitutes/Adulterants**

Bibhitaki	**Substitute/Adulterant**
Gokshura	**Substitute/Adulterant**
Haritaki	**Substitute/Adulterant**

Madanphala	Substitute/Adulterant
Maricha	**Substitute/Adulterant**
Pippali	**Substitute/Adulterant**

Vidanga	Substitute/Adulterant

Report-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Aamalaki					
Substitute/Adulterant					
Aaragwadha					
Substitute/Adulterant					
Bhallataka					
Substitute/Adulterant					
Bibhitaki					
Substitute/Adulterant					
Gokhura					
Substitute/Adulterant					
Haritaki					
Substitute/Adulterant					
Madanphala					
Substitute/Adulterant					
Maricha					
Substitute/Adulterant					
Pippali					

Substitute/Adulterant					
Vidanga					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

i. Phalaraja drug

Drugs	Botanical Name	Family	Synonyms
Kampillaka			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Kampillaka	Substitute/Adulterant

Reports-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Kampillaka					
Substitute/Adulterant					

Student's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

j. Seed drugs

Drugs	Botanical Name	Family	Synonyms
Bakuchi			
Ela			
Eranda			
Jyotishmati			
Kapikacchu			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Bakuchi	**Substitute/Adulterant**
Ela	**Substitutes/Adulterants**
Eranda	**Substitute/Adulterant**

Jyotishmati	Substitute/Adulterant
Kapikacchu	**Substitute/Adulterant**

Report-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Bakuchi					
Substitute/Adulterant					
Dhattura					
Substitute/Adulterant					
Ela					
Substitute/Adulterant					
Eranda					
Substitute/Adulterant					
Jyotishmati					
Substitute/Adulterant					
Kapikacchu					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

k. Unorganized drugs

Drugs	Botanical Name	Family	Synonyms
Guggulu			
Hingu			
Mocharasa			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Guggulu	**Substitute/Adulterant**
Hingu	**Substitute/Adulterant**
Mocharasa	**Substitute/Adulterant**

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Guggulu					
Substitute/Adulterant					
Hingu					
Substitute/Adulterant					
Mocharasa					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

l. Whole plant drugs

Drugs	Botanical Name	Family	Synonyms
Apamarga			
Bhrungaraja			
Bhumyamalaki			
Brahmi			
Kalamegha			
Mandukaparni			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Apamarga	**Substitute/Adulterant**
Bhrungaraja	**Substitutes/Adulterants**
Bhumyamalaki	**Substitute/Adulterant**

Brahmi	Substitute/Adulterant
Kalamegha	**Substitute/Adulterant**
Mandukaparni	**Substitute/Adulterant**

Report-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Apamarga					
Substitute/Adulterant					
Bhrungaraja					
Substitute/Adulterant					
Bhumyamalaki					
Substitute/Adulterant					
Brahmi					
Substitute/Adulterant					
Kalamegha					
Substitute/Adulterant					
Mandukaparni					
Substitute/Adulterant					

Student's Signature

Teacher's Signature

Practical no 4. **Date:-**

Name of the Practical - Comparative organoleptic (Taste, Color, Smell, Sound, Touch) and macroscopic examination (Size, Shape, Fracture, External markings like lenticels, ridges, nodes, furrows, cracks etc.) of following group of drugs

m. Gall drug

Drugs	Botanical Name	Family	Synonyms
Karkatashrungi			

Aim & Objective-

Materials -

Method/Procedure-

Observations- Schematic Diagram-

Karkatshrungi	Substitute/Adulterant

Reports-

Drugs	Shabda (Fracture)	Sparsha (Touch)	Roopa (Colour, Size, Shape)	Rasa (Taste)	Gandha (Odour)
Karkatashrungi					
Substitute/Adulterant					

Student's Signature

Practical no 5. **Date:-**

Name of the Practical - Microscopic Identification of genuine and adulterated drug, minimum 2 samples from Root/stem/leaf /bark/fruits

Botanical Name-

Family Name-

Part used

Aim & Objective-

Materials -

Method/Procedure-

Observations-

Schematic Diagram (T.S.)	Substitute/Adulterant
Microscopic diagram of T. S.	**Substitute/Adulterant**

Description

Schematic Diagram (T.S.)	Substitute/Adulterant
Microscopic diagram of T. S.	**Substitute/Adulterant**

Student's Signature

Teacher's Signature

Practical No. 6

College Garden Visit (In Campus)

Visit No. : **Date:**

Sl No	Classical Name / common Name	Botanical Name	Family	Key Points/Synonyms
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Student's signature **Teacher's signature**

7. Out Campus Visit

Visit No. : **Date:**

Place / Facility Visited: Cultivated garden / Tissue Culture Lab / Herbaria / Pharmacognosy Lab / Quality Control Lab / In-situ and Forest Plants demonstration (Tick appropriate)

Observations :

Out Come:

Student signature **Staff Signature**

Practical No. 8 **Date-**

Masked case sheet no. -

Ekal Dravya Parikshan (Proforma for Single drug therapy) -

A. Vikar Parikshan (Analysis of Disease) -

- Vikar Prakruti – (Nature of Disease)
- Dosha with Anshansha Kalpana (Fractionalization of Dosha)
- Dushya – Dhatu-Upadhatu- Mala -

Adhishthana -

- Dosha Sthana – Swasthanstha/ Anyasthanagata
- Vyadhi Sthana– Avirbhava Sthana
- Vyadhimarga –Koshtha/Shakha/ Madhyama

Hetuvishesha -

- Dosha Hetu -
- Vyadhi Hetu-
- Dushya Vaigunyakara Hetu -
- Matratha Hetu- Mrudu/Madhyam/Atimatra

Vyadhi Bala (Hetvadikatsnyarvayvaihi) (हेत्वादिकात्स्न्यार्वयवैः) -

- Hina/Madhyam/Ati-

Vyadhikala (Naktandinrtubhuktanshaihi- Yathamala) -(नक्तंदिनर्तुभुक्तांशैः – यथामल)

Vyadhi/ Lakshana (Vaya- Kalavadhi)-

Vyadhi/ Doshavastha-

- Sama/Nirama
- Vega/ Avega
- Upastambhita/ Nirupstambhita
- Sopdrava/ Nirupdrava
- Purana/ Nava
- Bahudosha/ Alpadosha

B) Rugna Pariksha -

- Rugnabala -
- Rugnavaya -
- Rugna Avastha- Santarpanarha/ Apatarpanarha -

C) Aushadha Pariksha -

- Dosha (with Amshaunsha kalpana)-
- Dushya (Dhatu/Upadhatu/Mala)-
- Bala(Hina/Madyama/Ati)-
- Kala(Nityag-Greeshmadi)-
- Anala -

- Prakruti-
- Vaya-
- Satwa (Hina-Avara/Madhya/Pravara)-
- Satmya (Avara/ Madhya/Pravara)-
- Aahara-
- Avastha (Sama/ Nirama) -

D) Upakramanishchiti –

- Shodhan/ Shaman-
- Santarpana/ Apatarpana-
- Langhna/Bruhana/Snehana/ Rukshana/Swedana/Stambhana-

E) Doshavyadhi- Anusara- Avasyaka-Gunasamuchaya

- Prabhav -
- Rasa -
- Vipaka -
- Virya-
- Guna -

Observations –

Point no.	Details	Observed	Plants can be recommended
1	Dosha (with Amshaunsha kalpana)		
2	Dushya (Dhatu/Upadhatu/Mala)		
3	Bala(Hina/Madyama/Ati) (Rugna/Vyadhi)		
4	Kala(Nityag-Greeshmadi) (Rugna/Vyadhi)		
5	Anala (Agni-digestive fire)		
6	Prakruti (Rugna/Vyadhi)		
7	Vaya (Rugna/Vyadhi)		
8	Satwa (Hina-Avara/Madhya/Pravara)		
9	Satmya (Avara/ Madhya/Pravara)		
10	Aahara		
11	Avastha • Sama/ Nirama • Vega/ Avega • Upastambhita/ Nirupstambhita • Sopdrava/ Nirupdrava • Purana/ Nava • Bahudosha/ Alpadosha		

F) Nishchita Dravya -

G) Kalpana -

H) Matra -

I) Kala (Annanadi Bheshaja Kala)-

- Duration

J) Anupana -

K) Pathya/ Apathya -

Student's Signature

Teacher's Signature

Practical no 9 **Date:-**

Name of the Practical - Physicochemical study of medicinal plant

Drugs		
Botanical Name		
Part used		

a) Name of the test –Foreign Matter

Aim & Objective-

Materials-

Method/Procedure-

Observations / Calculations-
1. Weight of the given sample- A
2. Weight of the foreign matter sorted - B

Formula- percentage of foreign matter =B*100/ A

Inference:

Conclusion:

Remarks:

Student's signature **Teacher's signature**

b) Name of the test -Moisture content

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of empty evaporating dish –A

2) Weight of evaporating dish with sample –B

3) Weight of evaporating dish with sample after heating –C

4) Weight of evaporating dish with sample after heating –C_1

This process should be repeated till two consecutive weights will be equal

Calculations-

$$\frac{B - C_1}{B - A} \times 100$$

Conclusion-

Student's signature

Teacher's signature

c) Name of the test -Ash content

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of empty Silica Crucible –A

2) Weight of Silica Crucible with sample –B

3) Weight of Silica Crucible with sample after incineration –C

Calculations-

$$\frac{C - A}{B - A} \times 100$$

Conclusion-

Inference-

Student's signature

Teacher's signature

d) Name of the test –Extractive Value

Aim & Objective-

Materials-

Method/Procedure-

Observations-

1) Weight of sample taken for extract –A

2) Weight of evaporating dish –B

3) Weight of evaporating dish with sample after heating –C

4) Weight of dry extract obtained -C-B=D

This process should be repeated till two consecutive weights will be equal

Calculations-

Percentage of Extractive value-=D*100/A

Conclusion-

Student's signature

Teacher's signature

Results -

Sr. No.	Particular		
a	Foreign Matter		
b	Moisture Content		
c	Ash value		
d	Extractive value		

Practical no 10 **Date:-**

Name of the Practical - Preliminary phytochemical study medicinal plant

Drugs		
Botanical Name		
Part used		

Aim & Objective-

Materials-

Method/Procedure-

Observations and results -

Sl. No	Tests	Criteria	RESULT YES/NO
I.	**Test for alkaloids**		
	Dragendorff's Test	Orange brown precipitate	
	Wagner's test	Reddish brown precipitate	
	Hager's Test	Yellow precipitate	
	Mayer's Test	Cream precipitate	
II.	**Test for Carbohydrates and Glycosides**		
	Molish's test	Purple to violet color ring	
	Fehlings solution Test	Brick red precipitate	
	Benedict's solution test	Reddish brown ppt	
	Barford's solution test	Red ppt	
III	**Tests for Proteins and Aminoacids**		
	Millon's Test	White precipitate turns red on heating	
	Ninhydrin solution Test	Violet colour	
IV	**Tests for Phenolic compounds and Tannins**		
	Ferric chloride solution	Blue green color	
	Sodium hydroxide	Yellow to red ppt	
V	**Test for Phytosterols and**		

	Triterpenoids		
	Liebermann's Buchard's Test	Deep red color	
	Salkowski reaction	Red color	
VI	**Test for flavonoids**		
	Shindoda test	Pink color	
VII.	**Test for Saponin**		
	Foam test	1 cm foam layer	

Student's signature **Teacher's signature**

Practical No. 11 **Date-**

Name of the practical -Thin Layer Chromatography

Aim-

Materials -

Procedure-

Observations and results -

Type of extracts –

Solvent system used

Solvent front-

Sr. No.	Spot distance	Rf values	Sketch	Visual light	254nm	365nm	Iodine chamber

Conclusion –

Interpretation-

Teacher's Signature

Student's Signature

Practical No. 12

College Garden Visit (In Campus)

Visit No. : **Date:**

Sl No	Classical Name / common Name	Botanical Name	Family	Key Points/Synonyms
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Student's signature **Teacher's signature**

13. Out Campus Visit

Visit No. : **Date:**

Place / Facility Visited: Cultivated garden / Tissue Culture Lab / Herbaria / Pharmacognosy Lab / Quality Control Lab / In-situ and Forest Plants demonstration (Tick appropriate)

Observations :

Out Come:

Student signature **Staff Signature**

Practical No. 14 **Date-**

Masked case sheet no. -

Ekal Dravya Parikshan (Proforma for Single drug therapy) -

A. Vikar Parikshan (Analysis of Disease) -

- Vikar Prakruti – (Nature of Disease)
- Dosha with Anshansha Kalpana (Fractionalization of Dosha)
- Dushya – Dhatu-Upadhatu- Mala -

Adhishthana -

- Dosha Sthana – Swasthanstha/ Anyasthanagata
- Vyadhi Sthana– Avirbhava Sthana
- Vyadhimarga –Koshtha/Shakha/ Madhyama

Hetuvishesha -

- Dosha Hetu -
- Vyadhi Hetu-
- Dushya Vaigunyakara Hetu -
- Matratha Hetu- Mrudu/Madhyam/Atimatra

Vyadhi Bala (Hetvadikatsnyarvayvaihi) (हेत्वादिकात्स्न्यार्वयवैः) -

- Hina/Madhyam/Ati-

Vyadhikala (Naktandinrtubhuktanshaihi- Yathamala) -(नक्तंदिनर्तुभुक्तांशैः – यथामल)

Vyadhi/ Lakshana (Vaya- Kalavadhi)-

Vyadhi/ Doshavastha-

- Sama/Nirama
- Vega/ Avega
- Upastambhita/ Nirupstambhita
- Sopdrava/ Nirupdrava
- Purana/ Nava
- Bahudosha/ Alpadosha

B) Rugna Pariksha -

- Rugnabala -
- Rugnavaya -
- Rugna Avastha- Santarpanarha/ Apatarpanarha -

C) Aushadha Pariksha -

- Dosha (with Amshaunsha kalpana)-
- Dushya (Dhatu/Upadhatu/Mala)-
- Bala(Hina/Madyama/Ati)-
- Kala(Nityag-Greeshmadi)-
- Anala -

- Prakruti-
- Vaya-
- Satwa (Hina-Avara/Madhya/Pravara)-
- Satmya (Avara/ Madhya/Pravara)-
- Aahara-
- Avastha (Sama/ Nirama) -

D) Upakramanishchiti –

- Shodhan/ Shaman-
- Santarpana/ Apatarpana-
- Langhna/Bruhana/Snehana/ Rukshana/Swedana/Stambhana-

E) Doshavyadhi- Anusara- Avasyaka-Gunasamuchaya

- Prabhav -
- Rasa -
- Vipaka -
- Virya-
- Guna -

Observations –

Point no.	Details	Observed	Plants can be recommended
1	Dosha (with Amshaunsha kalpana)		
2	Dushya (Dhatu/Upadhatu/Mala)		
3	Bala(Hina/Madyama/Ati) (Rugna/Vyadhi)		
4	Kala(Nityag-Greeshmadi) (Rugna/Vyadhi)		
5	Anala (Agni-digestive fire)		
6	Prakruti (Rugna/Vyadhi)		
7	Vaya (Rugna/Vyadhi)		
8	Satwa (Hina-Avara/Madhya/Pravara)		
9	Satmya (Avara/ Madhya/Pravara)		
10	Aahara		
11	Avastha • Sama/ Nirama • Vega/ Avega • Upastambhita/ Nirupstambhita • Sopdrava/ Nirupdrava • Purana/ Nava • Bahudosha/ Alpadosha		

F) Nishchita Dravya -

G) Kalpana -

H) Matra -

I) Kala (Annanadi Bheshaja Kala)-

- Duration

J) Anupana -

K) Pathya/ Apathya -

Student's Signature

Teacher's Signature

Practical No- 15 **Date of demonstration –**

Name of the Practical – Different Cultivation technique including methods mentioned in Vrikshayurveda

Aim:
Dravya (Name of the plant)

Botanical Name- **Family -**
Method mentioned in Vrikshayurveda:

AGROTECHNIQUES

Propagation materials-

Climate and Soil-

Planting in the field

- **Land preparation and fertilizer application-**
- **Transplanting and optimum spacing-**
- **Intercropping system-**
- **Intercultural and maintenance practices-**
- **Irrigation practices-**
- **Disease and pest control**

Observations-

Date	Observed features	Measurement	Remarks

Harvesting time & techniques

Teacher's Signature **Student's Signature**

Practical no. 16 **Date-**

Name of the practical -Network pharmacology activity

Name of drug-
Botanical name-
Phytochemical-

Materials

Process:
1st step: Screening and identification active constituents by Pubmed, IMPPAT or PubChem in digital library

2nd step: Conduct Target identification by BindingDB

3rd step: Conduct Identification of disease gene by DisGeNET

4th step: Conduct GO (Gene ontology) enhancement analysis by KEGG Pathway, R ratio

5th step: Conduct Network construction by STRING, PPI network, cytoscope

Results: Paste network print

Inference:

Conclusion:

Remarks:

Student's signature

Teacher's Signature

17. Herbarium Format	Name of the college DEPARTMENT OF DRAVYAGUNA VIJNYANA		
No: Date: Locality: District: State: Name of the plant: Botanical Name: Family:			
	Tree:		
	Phyllotaxy:		
	Inflorescence:		
	Fruits:		
	Bark:		
	Root:		
Pradhan Rasa: AnuRasa:	Guna:	Virya:	Vipaka:

Karma	
Indication	
Dose	
Formulations	

Teacher's Signature

Student's Signature

Practical No. 18

College Garden Visit (In Campus)

Visit No. : **Date:**

Sl No	Classical Name / common Name	Botanical Name	Family	Key Points/Synonyms
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Student's signature **Teacher's signature**

19. Out Campus Visit

Visit No. : **Date:**

Place / Facility Visited: Cultivated garden / Tissue Culture Lab / Herbaria / Pharmacognosy Lab / Quality Control Lab / In-situ and Forest Plants demonstration (Tick appropriate)

Observations :

Out Come:

Student signature **Staff Signature**

Practical No. 20 **Date-**

Masked case sheet no. -

Ekal Dravya Parikshan (Proforma for Single drug therapy) -

A. Vikar Parikshan (Analysis of Disease) -

- Vikar Prakruti – (Nature of Disease)
- Dosha with Anshansha Kalpana (Fractionalization of Dosha)
- Dushya – Dhatu-Upadhatu- Mala -

Adhishthana -

- Dosha Sthana – Swasthanstha/ Anyasthanagata
- Vyadhi Sthana– Avirbhava Sthana
- Vyadhimarga –Koshtha/Shakha/ Madhyama

Hetuvishesha -

- Dosha Hetu -
- Vyadhi Hetu-
- Dushya Vaigunyakara Hetu -
- Matratha Hetu- Mrudu/Madhyam/Atimatra

Vyadhi Bala (Hetvadikatsnyarvayvaihi) (हेत्वादिकात्स्न्यार्वयवैः) -

- Hina/Madhyam/Ati-

Vyadhikala (Naktandinrtubhuktanshaihi- Yathamala) -(नक्तंदिनर्तुभुक्तांशैः – यथामल)

Vyadhi/ Lakshana (Vaya- Kalavadhi)-

Vyadhi/ Doshavastha-

- Sama/Nirama
- Vega/ Avega
- Upastambhita/ Nirupstambhita
- Sopdrava/ Nirupdrava
- Purana/ Nava
- Bahudosha/ Alpadosha

B) Rugna Pariksha -

- Rugnabala -
- Rugnavaya -
- Rugna Avastha- Santarpanarha/ Apatarpanarha -

C) Aushadha Pariksha -

- Dosha (with Amshaunsha kalpana)-
- Dushya (Dhatu/Upadhatu/Mala)-

- Bala(Hina/Madyama/Ati)-
- Kala(Nityag-Greeshmadi)-
- Anala -
- Prakruti-
- Vaya-
- Satwa (Hina-Avara/Madhya/Pravara)-
- Satmya (Avara/ Madhya/Pravara)-
- Aahara-
- Avastha (Sama/ Nirama) -

D) Upakramanishchiti –

- Shodhan/ Shaman-
- Santarpana/ Apatarpana-
- Langhna/Bruhana/Snehana/ Rukshana/Swedana/Stambhana-

E) Doshavyadhi- Anusara- Avasyaka-Gunasamuchaya

- Prabhav -
- Rasa -
- Vipaka -
- Virya-
- Guna -

Observations –

Point no.	Details	Observed	Plants can be recommended
1	Dosha (with Amshaunsha kalpana)		
2	Dushya (Dhatu/Upadhatu/Mala)		
3	Bala(Hina/Madyama/Ati) (Rugna/Vyadhi)		
4	Kala(Nityag-Greeshmadi) (Rugna/Vyadhi)		
5	Anala (Agni-digestive fire)		
6	Prakruti (Rugna/Vyadhi)		
7	Vaya (Rugna/Vyadhi)		
8	Satwa (Hina-Avara/Madhya/Pravara)		
9	Satmya (Avara/ Madhya/Pravara)		
10	Aahara		
11	Avastha • Sama/ Nirama • Vega/ Avega • Upastambhita/ Nirupstambhita • Sopdrava/ Nirupdrava • Purana/ Nava • Bahudosha/ Alpadosha		

F) Nishchita Dravya -

G) Kalpana -

H) Matra -

I) Kala (Annanadi Bheshaja Kala)-

- Duration

J) Anupana -

K) Pathya/ Apathya -

Student's Signature

Teacher's Signature