Pharm.D - Year 1

Pharmaceutics

Complete subject manual: 10 practicals and activities. Each chapter includes a student observation or work record.

Use the PDF bookmarks to navigate. The table gives each practical's content-page count; the combined manual has continuous page numbers.

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Syrups

Experiment 1 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

A syrup is a concentrated aqueous sugar preparation. Dissolving, cooling and final volume adjustment affect clarity and concentration.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calculate and identify

List every ingredient, its role and the final batch size for each selected syrup.

2. Prepare the aqueous component

Dissolve water-soluble ingredients in the allotted water. Use heating only if allowed in that formula.

3. Combine with syrup

Mix in the stated sequence; incorporate flavour or volatile components after cooling as directed.

4. Adjust and evaluate

Bring to final volume at the stated temperature, mix and inspect for particles, crystallisation and change in colour.

5. Package and label

Transfer to a clean compatible container and enter preparation name, strength where applicable, quantity, route and assigned storage/use period.

Preparations in This Practical

Preparation	Formulation role / method distinction
Simple Syrup IP	Dissolve the assigned sugar quantity in purified water, using the formula-specified method. Cool before making up the final volume.
Ephedrine Hydrochloride Syrup NF	Dissolve the assigned medicinal ingredient separately in the stated water portion, combine with syrup and adjust to final volume. Confirm the authorised formula and strength.
Vasaka Syrup IP	Incorporate the prescribed Vasaka preparation into the syrup vehicle; follow the formula for extraction/prepared extract and clarification.
Ferrous Phosphate Syrup IP	Prepare the stated iron-containing solution in the formula sequence and combine with syrup; monitor precipitation and oxidation-related appearance.
Orange Syrup	Incorporate the specified orange flavour preparation without excessive heating; check clarity or the intended appearance.

Evaluation and Label

- Inspect clarity, crystals, colour, homogeneity and actual yield.
- Avoid prolonged heat that can change sugar or flavour components.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Simple Syrup IP	_____	_____
Ephedrine Hydrochloride Syrup NF	_____	_____
Vasaka Syrup IP	_____	_____
Ferrous Phosphate Syrup IP	_____	_____
Orange Syrup	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Inspect clarity, crystals, colour, homogeneity and actual yield.
- Avoid prolonged heat that can change sugar or flavour components.

Viva Questions and Answers

1. Why cool before final volume adjustment?

Liquid volume changes with temperature; final concentration must use a defined measurement basis.

2. Why can syrup crystallise?

Changes in water content or temperature can produce a supersaturated sugar solution.

3. Are all syrup strengths interchangeable?

No. The ingredient, strength and official formula must be identified.

Elixirs

Experiment 2 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

Elixirs are sweetened oral liquids that may use a mixed solvent system. Solubility can change when aqueous and alcoholic portions are combined.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calculate the formula

Record the ingredient roles and permitted solvent composition for each elixir.

2. Prepare separate portions

Dissolve ingredients in the solvent portion in which the formula specifies they are soluble.

3. Mix gradually

Combine the prepared portions with stirring in the stated order. Observe whether dilution causes turbidity.

4. Complete and assess

Adjust to final quantity and inspect again after the assigned standing period.

5. Label

Record the complete product name, concentration, route, solvent-related label requirements and assigned storage.

Preparations in This Practical

Preparation	Formulation role / method distinction
Piperazine Citrate Elixir BP	Prepare the water-soluble component and blend with the specified sweetened solvent vehicle.
Cascara Elixir BPC	Use the stated Cascara preparation; combine solvent portions gradually to avoid precipitation.
Paracetamol Elixir BPC	Dissolve paracetamol in the specified solvent component before controlled addition to the vehicle; inspect for delayed crystallisation.

Evaluation and Label

- Check clarity, precipitation, flavour component compatibility and final quantity.
- Protect volatile solvents from avoidable evaporation and ignition sources.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Piperazine Citrate Elixir BP	_____	_____
Cascara Elixir BPC	_____	_____
Paracetamol Elixir BPC	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Check clarity, precipitation, flavour component compatibility and final quantity.
- Protect volatile solvents from avoidable evaporation and ignition sources.

Viva Questions and Answers

1. Why use mixed solvents?

They permit incorporation of ingredients with different solubility needs.

2. Why can dilution produce a precipitate?

The final solvent mixture may dissolve less of an ingredient than the original solvent portion.

Simple and Paediatric Linctus

Experiment 3 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

Linctuses are viscous oral preparations. Their vehicle and concentration must follow the selected formula; adult and paediatric formula titles are distinct.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Check the selected formula

Identify whether the preparation is the simple or paediatric formulation and enter its intended strength.

2. Dissolve the soluble components

Use the specified liquid portion to obtain a uniform solution.

3. Blend the vehicle

Add the vehicle gradually with mixing, avoiding excessive entrapped air.

4. Complete the quantity

Adjust to the final quantity and examine consistency and uniformity.

5. Package

Use the assigned oral container and label the exact preparation and storage requirements.

Preparations in This Practical

Preparation	Formulation role / method distinction
Simple Linctus BPC	Prepare the prescribed soluble ingredients and combine with the viscous sweetened vehicle.
Paediatric Simple Linctus BPC	Use the specifically assigned paediatric formula and batch calculation; do not substitute the adult formula.

Evaluation and Label

- Compare consistency, homogeneity, final quantity and label completeness.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Simple Linctus BPC	_____	_____
Paediatric Simple Linctus BPC	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Compare consistency, homogeneity, final quantity and label completeness.

Viva Questions and Answers

1. What distinguishes a linctus?

Its viscous oral vehicle and its specific formulation and administration instructions.

2. Can the paediatric title be added to an adult batch?

No. The selected paediatric composition must be used.

Pharmaceutical Solutions

Experiment 4 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

A true solution contains dissolved solutes in a suitable solvent. Complex formation, acidity or alkalinity and solvent choice can influence solubility.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Identify the formulation

Record each solution name, strength, ingredient grade and route.

2. Prepare the solvent component

Dissolve any complexing or supporting ingredient before the solute where the formula specifies this sequence.

3. Incorporate the active component

Add gradually with mixing under the assigned ventilation and temperature controls.

4. Complete and examine

Cool where needed, adjust the final quantity and check clarity, pH if specified and absence of unintended solids.

5. Package and label

Select the specified container; distinguish external preparations from oral preparations.

Preparations in This Practical

Preparation	Formulation role / method distinction
Cresol with Soap Solution IP	Soap assists incorporation of cresol in water. Use the prescribed soap base and formula sequence.
Strong Ferric Chloride Solution BPC	Prepare the assigned ferric chloride solution; the formula-specified acid component helps control hydrolysis.
Aqueous Iodine Solution IP	Dissolve the prescribed iodide first, then add iodine and complete the aqueous volume.
Strong Iodine Solution IP	Follow the specified stronger iodine formula and solvent system; do not infer its composition from the aqueous solution.
Strong Ammonium Acetate Solution IP	Follow the assigned neutralisation method, control heat and complete the concentration after cooling.

Evaluation and Label

- Check clarity, colour, pH where specified and absence of precipitate.
- Use supervision for corrosive solutions, iodine, cresol and exothermic neutralisation.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Cresol with Soap Solution IP	_____	_____
Strong Ferric Chloride Solution BPC	_____	_____
Aqueous Iodine Solution IP	_____	_____
Strong Iodine Solution IP	_____	_____
Strong Ammonium Acetate Solution IP	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.

- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Check clarity, colour, pH where specified and absence of precipitate.
- Use supervision for corrosive solutions, iodine, cresol and exothermic neutralisation.

Viva Questions and Answers

1. Why dissolve iodide before iodine?

Iodide permits formation of more soluble iodine-containing species in water.

2. Why does ferric chloride require attention to solution conditions?

Hydrolysis may change its appearance and composition.

3. Why check the route?

Similar-looking solutions can have different strengths and uses.

Liniments

Experiment 5 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

Liniments are liquid or semi-liquid preparations for external application. They may be solutions or emulsions, so their evaluation and labels depend on the formula.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calculate

Record the oily vehicle, volatile ingredient and any emulsifying component.

2. Prepare phases or solution

Dissolve camphor in its vehicle or prepare the specified phases for turpentine liniment.

3. Combine

Mix in the stated sequence to obtain the required solution or emulsion.

4. Evaluate

Examine uniformity and, for the emulsion, separation and redispersibility.

5. Label

Use an external-use label and the formula-specific shake instruction where needed.

Preparations in This Practical

Preparation	Formulation role / method distinction
Turpentine Liniment IP	Prepare the specified components and combine to obtain the intended emulsion; assess redispersibility and phase separation.
Camphor Liniment IP	Dissolve camphor in the prescribed oily vehicle with the minimum formula-specified warming and mix uniformly.

Evaluation and Label

- Avoid unnecessary heating and loss of volatile ingredients.

- Record whether the liniment is a solution or emulsion.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Turpentine Liniment IP	_____	_____
Camphor Liniment IP	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Avoid unnecessary heating and loss of volatile ingredients.
- Record whether the liniment is a solution or emulsion.

Viva Questions and Answers

1. Do all liniments need shaking?

A dispersed system may need shaking; a true solution usually does not. Follow the assigned formula label.

2. Why use an external-use label?

The preparation and ingredient strength are intended for the stated external route.

Suspensions

Experiment 6 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

Suspensions contain insoluble particles distributed in a liquid. Wetting, particle size, structured vehicle and redispersibility influence dose uniformity.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calculate and inspect

Record insoluble ingredients, wetting agents and vehicle components.

2. Wet the powder

Form a smooth paste with the specified wetting liquid; remove visible lumps.

3. Disperse

Add vehicle in portions with trituration or mixing, rinsing the mortar into the measure.

4. Complete and test

Make up the volume, mix and record sedimentation and redispersion after a defined standing period.

5. Package

Leave room for shaking and apply the specified shake-well and route labels.

Preparations in This Practical

Preparation	Formulation role / method distinction
Calamine Lotion	Triturate the assigned insoluble powders with the wetting component, gradually dilute with vehicle and complete the volume.
Magnesium Hydroxide Mixture BP	Prepare or incorporate the specified magnesium hydroxide dispersion, mix with the stated vehicle and assess settling and redispersibility.

Evaluation and Label

- Check absence of coarse lumps, sediment volume and ease of redispersion.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Calamine Lotion	_____	_____
Magnesium Hydroxide Mixture BP	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Check absence of coarse lumps, sediment volume and ease of redispersion.

Viva Questions and Answers

1. Why is wetting necessary?

It helps replace air at powder surfaces so particles disperse in the vehicle.

2. Is rapid settling alone proof of a poor suspension?

No. Redispersibility and dose uniformity must also be considered.

Emulsions

Experiment 7 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

An emulsion disperses one immiscible liquid within another using an emulsifying system. Primary emulsion formation and subsequent dilution affect stability.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calculate phases

Identify dispersed phase, continuous phase and emulsifier in the selected formula.

2. Form the primary emulsion

Apply the assigned wet-gum, dry-gum or other method in the prescribed sequence.

3. Dilute gradually

Add the remaining aqueous vehicle in portions after a uniform primary emulsion forms.

4. Evaluate

Record type, uniformity, creaming, separation and redispersion using the assigned checks.

5. Package and label

Use a compatible container and the appropriate route and shake instructions.

Preparations in This Practical

Preparation	Formulation role / method distinction
Cod Liver Oil Emulsion	Use the assigned oil-emulsifier-water proportions and method; form the primary emulsion before adding the remaining vehicle.
Liquid Paraffin Emulsion	Use the formula-specific emulsifier ratio and primary emulsion method; do not automatically reuse the fixed-oil ratio.

Evaluation and Label

- Distinguish reversible creaming from cracking that does not redisperse.

- Use the formula-specific primary-emulsion proportions.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Cod Liver Oil Emulsion	_____	_____
Liquid Paraffin Emulsion	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Distinguish reversible creaming from cracking that does not redisperse.
- Use the formula-specific primary-emulsion proportions.

Viva Questions and Answers

1. What is creaming?

Movement of droplets into a concentrated layer without necessarily breaking the interfacial film.

2. Why form a primary emulsion first?

It establishes the droplet dispersion and emulsifier film before further dilution.

Powders and Pharmaceutical Incompatibility Risks

Experiment 8 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare suitable powder dosage forms and recognise physical and reactive incompatibilities.

Principle

Particle size, geometric dilution, moisture and component compatibility determine powder uniformity and stability.

Requirements

- Assigned non-reactive teaching powders, balance, mortar, sieve and suitable containers.
- Instructor-provided compatibility records for hazardous reactive combinations.

Procedure

1. Eutectic powders

Discuss melting-point depression when compatible organic solids are combined. For the assigned safe formula, triturate separately with the specified adsorbent and combine; inspect for dampness.

2. Dusting powders

Reduce and sieve the assigned ingredients, mix by geometric dilution and package to deliver a fine uniform powder. Record whether the intended site requires a sterile product.

3. Insufflations

Examine the assigned route-specific formula and device; assess fineness, uniformity and packaging. Do not administer a teaching preparation.

4. Reactive powder discussion

Use a written case to recognise oxidiser-fuel or otherwise reactive incompatibilities. Explain segregation, rejection of an unsuitable formulation and escalation to the supervisor. This component is a discussion only; no explosive mixture is prepared.

5. Record

Enter the formulation type, ingredients, compatibility issue, observed quality and complete label.

Observations and Record

Type	Observation / assessment
Eutectic mixture	_____
Dusting powder	_____
Insufflation	_____
Reactive incompatibility case	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Illustration: 2 g of an ingredient in a 20 g final powder gives 10% w/w.
- A 2 g + 18 g blend requires uniform mixing; a correct total mass alone does not establish content uniformity.

Result

Record the prepared safe powder types and the conclusion from the reactive compatibility case.

Precautions

- Use non-reactive teaching mixtures only; never combine components from the reactive compatibility case.
- Control dust exposure and use the assigned route-specific quality requirements.

Viva Questions and Answers

1. What is geometric dilution?

Successively mixing the smaller portion with approximately comparable portions of diluent to improve uniformity.

2. What is a eutectic mixture?

A mixture whose melting behaviour can give a lower melting point than that of the separate components.

3. How is a reactive incompatibility handled?

Do not prepare the incompatible combination; document and refer it for a suitable reformulation.

Suppositories

Experiment 9 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare, compare and label the formulations listed in this practical using the assigned formula.

Principle

Suppositories contain an ingredient in a moulded base. Base behaviour, mould calibration and displacement by the medicament affect the final mass.

Requirements

- Assigned master formulas and ingredients for the formulations listed below.
- Balance, beakers, measuring cylinders, stirring equipment and compatible containers.

Procedure

1. Calibrate the mould

Prepare blank base units as specified and obtain the mean base-only mass per cavity.

2. Calculate

Record the number of units, medicament per unit and the defined displacement factor for the chosen base.

3. Prepare the mass

Melt or soften the base as specified, incorporate the ingredient uniformly and maintain controlled mixing.

4. Fill and cool

Fill the mould in the assigned manner, allow it to set, trim and remove without damaging the units.

5. Evaluate

Check appearance, individual mass, uniform distribution and any assigned softening/disintegration test before labelling.

Preparations in This Practical

Preparation	Formulation role / method distinction
Boric Acid Suppositories	Disperse the assigned boric acid in the prescribed base and use mould calibration and the defined displacement calculation.
Chloral Suppositories	Follow the authorised teaching formula and compatibility assessment; control base temperature and discuss the ingredient-specific precautions with the instructor.

Evaluation and Label

- Confirm which displacement-factor definition the formula uses.
- Avoid overheating the base and settling of dispersed material.

Observations and Record

Preparation	Batch size / yield	Appearance and checks
Boric Acid Suppositories	_____	_____
Chloral Suppositories	_____	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Scale factor = required final quantity / quantity in the master formula.
- Illustration: a 100 mL formula scaled to 30 mL has factor 0.30; 5 g of an ingredient becomes 1.5 g.
- Percentage w/v means grams in 100 mL of final preparation; percentage w/w means grams in 100 g of final preparation.

Displacement example only: if one gram of medicament displaces 0.5 g of base, 2 g of medicament displaces 1 g. Subtract that base displacement from the base-only mould requirement, then apply the stated process allowance.

Result

Record each preparation, formula version, actual yield, evaluation, container and complete label.

Precautions

- Record which official or college formula and strength were used. The historic IP, BP, BPC and NF titles in the syllabus do not establish a current market specification.
- Avoid confusing the amount of vehicle added with the final volume or mass.
- Use an appropriate route label; a teaching batch is not supplied to a patient.
- Confirm which displacement-factor definition the formula uses.
- Avoid overheating the base and settling of dispersed material.

Viva Questions and Answers

1. Why calibrate a mould?

Cavity volume is fixed, but the mass held depends on the density of the selected base.

2. How does medicament displacement affect base quantity?

The medicament occupies volume and reduces the base needed for a calibrated cavity.

Physical Chemical and Therapeutic Incompatibilities

Experiment 10 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To distinguish incompatibility types and document a suitable response.

Principle

An incompatibility may alter a preparation physically, cause a chemical change or produce an unsuitable clinical effect. The type of problem determines the appropriate remedy.

Requirements

- Assigned prescription examples, non-reactive demonstration preparations and authorised medicine information.

Procedure

1. Physical case

Observe a safe case of insolubility, precipitation or immiscibility. Record the change and whether the intended dosage form permits a stable dispersion.

2. Chemical case

Study a supplied reaction or degradation case. Identify the affected ingredients and evidence of change without preparing a hazardous combination.

3. Therapeutic case

Review a fictional duplicate-therapy, contraindication or interaction case. Check indication, patient factors and current approved information.

4. Propose a response

Consider an authorised change in vehicle, order of mixing, separate dispensing or prescriber clarification as appropriate. Do not silently change the prescription.

5. Document

State the issue, supporting evidence, proposed correction and supervisor/prescriber decision.

Observations and Record

Case	Type	Issue and authorised response
Insolubility / immiscibility	Physical	_____
Degradation / reaction	Chemical	_____
Duplicate or unsuitable therapy	Therapeutic	_____

Result

Record the completed observations, calculations and conclusion with units. State any limitation of the observation.

Precautions

- Distinguish a formulation fault from a deliberate dosage-form design.
- Use supervisor review for reformulation and clinical decisions.

Viva Questions and Answers

1. Is every precipitate a chemical incompatibility?

No. A physical loss of solubility may produce precipitation without chemical conversion.

2. Why contact the prescriber?

A proposed change may affect treatment, strength or intended use and requires appropriate authorisation.

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