

peutic Action of: *Green Hellebore*, *Aconite*, *Stramonium*, *Colchicum*, *Spanish Flies*.

(4) Describe a good specimen of *Coca Leaves*.

(5) Give preparations, and their doses, of *Ipecacuanha*.

(6) What is *Catechu*? Describe the mode of preparing it.

(7) Describe *Crocus* briefly, and say what are its chief substitutions and adulterations, with tests.

(8) Write short notes on *Aleurone* and *Inulin*.

THEORETICAL CHEMISTRY.

Examiner—Graham Chambers, B.A., M.B.

1. Explain the terms: (a) Acid Salt, (b) Base, (c) Basic Salt, (d) Ketone, (e) Amine, (f) Dissociation.

2. Describe the preparation and properties of Hydrogen Peroxide.

3. What volume of Sulphur Dioxide gas measured at 20°C. and 740^{mm} barometric pressure is required to prepare one litre of Sulphuric acid sp gr. 1.854.

4. Give an account of the chemistry of Zinc; name analogous elements and illustrate their relations to Zinc.

5. Describe the preparation and properties of the group of organic compounds known as "Aldehydes." How would you test for the presence of an Aldehyde in Formaline?

6. Starting with Ethyl alcohol, illustrate by equations the preparation of (a) Diethyl Ether, (b) Acetic Ether, (c) Ethyl Chloride, (d) Paraldehyde, (e) Acetic Acid, (f) Dimethyl Ketone.

7. Describe the preparation of Sodium Carbonate from Sodium Chloride. How would you distinguish Sodium Carbonate and Sodium Bicarbonate?

8. Write equations illustrating the preparation of

(a) Ferric Chloride from Ferrous Chloride.

(b) Ferrous Chloride from Ferric Chloride.

(c) Sulphuric Acid from Sulphurous Acid.

(d) Sulphurous Acid from Sulphuric Acid.

(e) Phosphoric Acid from Phosphorous.

(f) Calomel from Mercuric Sulphate.

PRESCRIPTIONS.

Examiner—L. B. Ashton, Phm.B.

1. Translate fully into English:

Recipe.

Decocti Hordei, uncias decem;
Olei Lini Usitatissimi, uncias duas;
Mucilaginis Acaciae, unciam;

Tere oleum cum mucilagine doceo probe cooverint tum sensim adde decoctum, ut fiat enema;

Interdum addere liceat Magnesii Sulphatis unciam.

2. Expand the following abbreviations and translate:

(a) Ad iij. vic., (b) Altern hor., (c) Colut., (d) Diluc. sum. iter. cras noc., (e) Lat. dol. admov., (f) Si mal. urg., (g) Om. quadr. hor., (h) P.B., (i) Instar., (j) Donec aeger convalescat.

3. Translate:

Recipe.

Extracti Opii, grani tres quartas partes;

Pilulae Hydrargyri, grana quatuor;

Extracti Hyoscyami, grana tria;

Contunde simul et divide in pilulas numero duas.

Sumantur pro dosi hora IXna

vesperi hac nocte atque cras

eadem hora.

Mitte numero octo.

Translate directions to both compounder and patient, pointing out any errors you may note as to compatibility in the following prescriptions:

4. R. Extr. Colchici Acet. grs. xii.
Mag. Carb. q. s. ut ft. Massa, et in pil. vigint. quat. div.
Sig. j. t. i. d.

5. R Chloralis Hydratis ʒiv
Potassii Carbonatis ʒvi.
Tr. Hyoscyam. ʒi.
Syr. Aurantii. ʒss.
Aquam ad ʒvi.

M. Sig.

Exhib. coch. med. ter quaterve de d. vel. saep. argente convulsione vel spasmo.

6. R. Potassii Bromidi. ʒiv.
Tinct. Digital. ʒi.
Liq. Strych. ʒiii.
Infus. Buchu. ad ʒiv.

Misce.

Sig. Sum. aeger coch. parv. stat; iter post hor. diende altern. hora donec evanes. symptomata.

7. R. Phenazoni ʒii.
Tr. Aconiti. ʒi.
Elix. Simplicis. ʒp.
Sp. Etheris Nitrosi. ʒi.
Aquam ad. ʒiii.

Sig. M.

ʒii. om. hor. dum feb. et cephalalgia pos-tulet.

8. Potassii Permanganatis.
Acid. Tannici. aa. ʒii.

Misce et tere bene.

Sig.

Consperg. sicca mor. dict. ad foetorem obstandum.

9. (a) You are directed to suspend Subnitrate of Bismuth in a mixture.

State your choice between Acacia and Tragacanth for this purpose, and give reasons.

(b) R. Tr. Rhei. ʒii.
Syr. Ejusdem. ʒp.
Aquam ad. ʒii.
Pl. haustus. f.

What official syrup is here indicated?

10. (a) In dispensing you find your stock of Acetate of Morphine to be but sparingly soluble in water. How would you overcome the difficulty?

(b) What are Advantages?

Mention the advantages they afford as a means of exhibiting powders.

Final Examinations.

PHARMACY AND PHARMACEUTICAL CHEMISTRY.

Examiner—Franklin T. Harrison, Phar.D.

1. A sample of spirits contains 91 per

cent. of alcohol by weight (Sp. Gr. .825). How many fluid ounces will be required to make 1 pint Imp. of (a) Rectified Spirit. (b) Proof Spirit?

2. State the strength of the official solutions of the following: Hydrochlorate of Cocaine, Nitroglycerine Permanganate of Potassium, Perchloride of Mercury, Iodine, Ammonia.

3. Name points desired in a model pill-coating. Compare advantages and disadvantages of various methods in use.

4. *Extractum Nucis Vomicae*:

(a) How is the extract prepared?

(b) What alkaloids does it contain?

(c) What is the official requirement as to strength?

(d) Give method of standardization.

5. Give a method of assay for alkaloids in a drug which also contains fixed oil and tannin.

6. Name adulterants and impurities likely to be present, and give method of detecting same in the following: Ether, Iodide of Potassium, Cream of Tartar, Light Magnesia.

7. Describe generally the principles which would guide you in the selection of solvents for the extraction of drugs, and also in the method of extraction.

8. *Phenacetinum*: State from what prepared, and give physical and chemical properties and tests.

9. *Acidum Citricum*: State from what prepared, and give chemical properties and tests and pharmaceutical uses.

PRACTICAL PHARMACY.

Examiner—Franklin T. Harrison, Phar.D.

1. Prepare six fluid ounces of Syrup of Phosphate of Iron by the following formula:

SYRUPUS FERRI PHOSPHATIS.

Granulated Sulphate of Iron.	224 grains
Phosphate of Sodium.	200 "
Bicarbonate of Sodium.	56 "
Concentrated Phosphoric Acid.	1 1/2 fl. oz.
Refined Sugar.	8 oz.
Distilled Water.	8 fl. oz.

Dissolve the sulphate of iron in about four ounces of boiling water, and the phosphate of sodium in a similar quantity of cold water. Mix the solutions, then add the bicarbonate of sodium dissolved in a little water, and, after careful stirring, transfer the precipitate to a calico filter, and wash until the filtrate is free from sulphates. Mix the residue on the filter in a mortar with the phosphoric acid. As soon as the precipitate is dissolved, filter the solution, add water and the sugar, and dissolve without heat. Add more water if necessary to make bulk up to twelve fluid ounces.

2. Determine the specific gravity of sample of alcohol submitted.

In the preparation of syrup of phosphate of iron:

(a) Why is bicarbonate of sodium used?

(b) Write chemical equation for each reaction.