

at Toronto during this past fall, and I have jotted them down rather hurriedly and uninterestingly for the enlightenment and guidance of those with whom my life is closely knit in the fellowship of occupation.

Examination Questions Ontario College of Pharmacy.

JUNIOR EXAMINATIONS, DECEMBER, 1894.

PHARMACY.

Examiner:—CHAS. F. HEEBNER, Ph.G., Phm.B. (Tor.).

Time allowed, three hours.

1. HYDRARGYRI IODIDUM RUBRUM. Give (a) chemical name and formula; (b) method of preparation in detail, stating reasons in full for each step from beginning to end; (c) equation showing chemical change which takes place; (d) means of determining the quantities of the necessary ingredients to furnish the greatest possible yield of salt.

2. What volume of *Aether Purus* will be required to counterpoise four fluid ounces of *Acium Nitricum*? What will 0.5 liter of *Rectified Spirit* weigh, and (c) what weight of absolute alcohol will it represent?

3. (a) Differentiate between *Water of Crystallization* and *Water of Deceppilation*. (b) Explain why granulation is a more efficient means of purifying certain chemical salts than re-crystallization.

4. How many *Aviordupis* pounds are represented by the sum of 425 dekagrams, 8½ kilo's, 3¾ myriagrams, 825 decigrams, 460 milligrams, and 18 grams.

5. (a) Describe and illustrate a method of upward-filtration, stating its advantages over the usual method, and the objects gained. What medium may be used in the filtration of (b) Phosphoric Acid, (c) Solution of Soda?

6. Having in stock 50 grams of powdered opium containing 8 p.c. of morphine, in what proportions can I most economically mix with it powders assaying 9, 12, and 15 p.c., to yield a product that will assay 10 per cent. morphine.

7. (a) Mention the initial unit of the Metric System; (b) explain the derivation of the unit of weight from the lineal unit; (c) show the relation existing between the units of capacity and length. Give the equivalents of the following in the customary weights and measures: (c) Meter, (d) Gram, (e) Liter. Give approximate metrical equivalents for: (f) grain, (g) drachm, (h) fluid ounce, (i) inch.

8. (a) Define and give examples of Solution by Intervention; (b) Define Supersaturated Solution; (c) a solution of Potassic Chlorate, saturated at 15° C., weighs 41¼ ozs.; what amount of salt is there in solution; (d) and what is the percentage strength of the solution?

9. (a) Define specific gravity; (b) what is the unit for solids and liquids; (c) state method of using the loaded cylinder in specific gravity determinations. Give sp. gr. and percentage strength of (a) Spiritus

Tenuior, (b) Aether, (c) Chloroformum, (d) Liquor Ammoniac, (e) Liquor Ammoniac Fortior.

10. A piece of wax weighs 14.25 grams; a block of brass (sufficiently large to immerse the wax in water) weighs in distilled water, 15° C.—30 grams; wax and brass together weigh in distilled water, 15° C.—29.25 grams; what is the specific gravity of the wax?

11. State how each of the following are affected by exposure in uncorked bottles: (a) *Plumbi Acetus*, (b) *Zinci Sulphas*, (c) *Calcii Chloridi*, (d) *Liquor Plumbi Subacetatis*.

12. Give test to distinguish between a solution of plumbic acetate and Goulard's extract.

CHEMISTRY AND PHYSICS.

Examiner:—A. Y. SCOTT, B.A., M.D., C.M.

Time allowed, two hours.

1. State the Law of Definite Proportion and illustrate your answer.

2. Give the history, occurrences, preparation, and properties of Ammonia.

3. How much oxygen can be obtained from 200 grammes of Potassium Chlorate (a) at normal temperature and pressure, (b) at 15° C. and 740 mm. pressure?

4. What are the impurities in ordinary commercial Hydrochloric and Sulphuric Acids? What are the sources of these impurities? How would the Acids be purified?

5. Give an account of the occurrence, preparation, chemical and physical properties of Sulphur Dioxide. How much Sulphur would it require to unite with the Oxygen in 1,000 liters of air at 0° and 760 mm.?

6. Write equations illustrating action of:

(a) Potassium Hydrate on Ammonium Chloride.

(b) Chlorine on Hydrogen Sulphide.

(c) Barium Chloride on a Sulphate.

(d) Sulphur Dioxide, Oxygen, Hydrogen Nitrate and Water.

7. State Boyle's Law. How would it be proved?

PHARMACAL LABORATORY.

Examiner:—CHAS. F. HEEBNER, Ph.G., Phm.B. (Tor.).

Time allowed, two and a half hours.

1. Determine the extractive matter in the liquid preparation handed you, and report according to the following forms:

(a) Quantity of liquid taken.

(b) Amount (actual) of extractive matter found.

(c) Percentage of extractive matter found.

(d) Write out process used in determining extractive in detail, and exhibit all figures used.

2. Determine the specific gravity of the solid substance, and submit a report of your results in accordance with the subjoined form:

(a) Substance marked.

(b) Weight of substance taken.

(c) Weight of an equal volume of water.

(d) Specific gravity of substance.

Exhibit all figures used in the above determination.

N.B.—Neatness of work, order in arrangement, and cleanliness of working desk and outfit, will enter as important factors in your ratings.

LATIN, ETC., THERAPEUTICS AND POSOLOGY.

Examiner:—J. T. FOTHERINGHAM, B.A., M.B.

Time allowed, two hours.

1. Decline the nouns:—*Bromidum*, *Congius*, *Liquor*, *Pilula*, and *Spiritus*, naming the cases.

2. Give case and syntax of the italicized words:—Recipe *Tinctura Asafetide drachmam unam quartâ quaque horâ*.

3. Analyze this classical prescription into its component parts, giving each part its name. Translate directions:

R. Pulv. Jalapæ, gr. xx.

Pot. Tart. Ac., ʒj.

Syr. Zingib., ʒij.

Aq. Ment. Pip., ʒj ss.

Ft. haust. stat. sumend.

4. Apply Young's rule to the above prescription to reduce it to suit a child of four years of age.

5. Give maximum doses of the following preparations:—Pulv. Cretæ Aromat. c. Opio; Pil. Hydrarg.; Extr. Stramonii; Extr. Casc. Sagr. Fl.; Extr. Bellad. Alcohol.; Extr. Aloes Barb.; Vin. Antimon.; Tr. Cannab. Ind.; Tr. Capsici; Tr. Valer. Ammon.

6. Enumerate the ordinary methods of administration of drugs, and distinguish between terms Local Effect and Systemic Effect, giving example of each.

7. Define the following terms: Absorption, Digestion, Ventricular Systole, Plasma, and Metabolism.

8. Describe, very shortly, the Blood.

9. Define the following terms, with examples: Tonics, Anaesthetics, Hypnotics, Stimulants, Narcotics.

BOTANY.

Examiner:—A. Y. SCOTT, B.A., M.D., C.M.

Time allowed, two hours.

1. Describe fully specimens marked A and B. Under what would each be classed, and why?

What is meant by Phyllotaxy? Name the different kinds of buds found on the branch shown, and what is their arrangement?

3. Describe the various forms of Inflorescence. Under which would you class the flower shown, and why? Give as minute a description as possible of the parts of the same flower seen without dissection.

4. Trace the formation of the fruit and seed from the flower. Describe the specimen of fruit as to class, loculi, placenta, epicarp, etc., also the seed it contains.

5. Describe Parenchymatous Tissue.