

purposes was vividly shown by the production of various views. The lecture throughout was listened to with much attention, and was thoroughly appreciated. At the conclusion of the same a cordial vote of thanks was tendered the lecturer.

Pharmaceutical Examinations.

MONTREAL COLLEGE OF PHARMACY.

MATERIA MEDICA AND PHARMACY SENIOR CLASS, MARCH 31ST, 1898.

Examiner, PROFESSOR T. D. REED, M.D., J.P.

1—Name four derivatives of alcohol of medical value and show by an equation the production of one of them. 2—Distinguish between hydrocarbons and carbohydrates. Give four examples of each, and note the chief chemical differences which distinguish them. 3—Distinguish between distillation, fractional distillation, destructive distillation, distillation in vacuo. What are the conditions for obtaining a satisfactory sample of distilled water? 4—What is a ferment? Name four products, obtainable by as many different ferments. 5—Give a concise account of the botany and pharmacognosy of Ergot, give also the official preparations with strength. 6—Nux Vomica, definition, botanical name of plant, medical action, official preparations. Give in outline the official process for titrating the Galenical preparations of Nux Vomica. 7—Relate the modern idea, as to the constitution of Alkaloids. What are Leucomaines; Ptomaines? 8—With 1 pound of powdered opium 11 p.c. morphia strength, half pound of 8 p.c., and 1 pound of 5 p.c., how large a quantity of powder of 10 p.c. morphia strength may be made? 9—Give the composition of the following: Heberden's Ink, Pilul. Rufi, Ward's Paste, Huxham's tincture and Pil Cochia. 10—Relate the principal facts of the botany, pharmacognosy, pharmacy and therapeutics of colchicum.

BOTANY.

Examiners { PROFESSOR JOS. E. BERNROSE, F.C.S.
PROFESSOR J. L. MORRISON, F.R.M.S.

To what groups and classes of plants does the Fucus Vesiculosus belong? Describe its reproductive organs. 2—Describe the fruit called "Samara"; in what family of plants is it found? 3—What kind of plants are included in the Groups: Thallophytes, Bryophytes and Pteridophytes? 4—What do you understand by the "Alternation of Generation"? Illustrate by an example taken from the Ferns.

5—Name some forms of inflorescence found among the grasses, and the parts of one of the flowers in order. 6—Describe in botanical terms the following articles of food: figs, onions, peas, lettuces, carrots, asparagus, Potatoes. 7—Give the essential characters of a yellow lily, yellow flag, and of a buttercup. 8—Where are the chloroplastids found and what are their functions? 9—Define the terms: rotate, papilionaceous, dichogamy, monoecious, dioecious. 10—How would you distinguish between cellulose, cutin and lignin?

CHEMISTRY SECOND YEAR.

Examiner, PROF. C. A. PFISTER.

1—Five grammes of an organic body which is liquid and neutral gives on combustion grams 11.89189189 of CO_2 , and 6.081 grams of H_2O . Find the percentage composition (C.H.O.) 2—Find the formula of the above, name the body; it is the ethyl series v. Dens. 2.569 (air=1). 3—We desire to titrate a sample of vinegar, using normal H.Cl. and semi-normal N.H_3 . Into 100 cm^3 of the sample is poured 102.4 cm^3 of the ammonia. This was found to be excess and 62 cm^3 of the H.Cl. was required to make the liquid neutral. Find the Λ of the vinegar. Pure acetic acid = Λ 1.064. 4—A manufacturer has the above in quantity at 2,201 gallons. For excise purposes this is to be taxed according to the alcohol of 94 p.c. Λ .8201 it represents; make the calculation. Alcohol pure may be taken as Λ 7940. 5—Five grammes of a mixture of KNO_3 and NaNO_3 is treated with H_2SO_4 . The dry sulphates weigh 4.229 grammes. Find the quantity of each nitrate. 6—From 100 lbs. of glucose, containing 10 p.c. of water, how much alcohol should be obtained, in fermentation, allowing 7 p.c. for loss. 7—Give the chemical formula for Diethylamine, Hydrate of triethyl, butylammonium, methylethyl propylphosphine. 8—Show the mode of generation of phenol from its usual hydrocarbon source. Give the formula for Nitrobenzene, and show the relation of aniline to ammonia. 9—Show the relation of the aldehydes, acids, ethers of the series $\text{C}_x\text{H}^{2x}_x + \frac{1}{2}\text{O}$. 10—Explain the terms: Series, homologue, isomeric, metameric, polymeric. The formula of ethylglycol diatomic is $\text{C}_2\text{H}_6\text{O}_2$, note the aldehydes and acids obtainable from it. Indicate the three nitricethers from glycerine.

CHEMISTRY AND PHYSICS JUNIOR CLASS.

Examiner: PROF. JOS. BERNROSE.

1—What is the weight of a cubic metre of ether (.720)? of a minim (Imp) of quicksilver (13.59)? 2—Where and in what state does Iodine occur? How is it obtained, and what are its Chemical and Physical properties? 3—Given a pipette graduated into tenths of a cubic centimetre, a test tube and some pure water, how would you determine the specific gravity of a weighted button of lead? 4—Readings by Hearn and Harrison's barometer on March 19th, at noon 29.80; the day before 30.30; what does this statement mean? 5—How much calcined magnesia will be obtained by heating 1000 grammes of the B.P. Carbonate? 6—How would you make a dialysing apparatus, and how would you use it? 7—By what reaction may the Phosphate, oxalate and iodide of sodium be distinguished? 8—When the following objects are viewed through a spectroscope, which kind of spectrum is seen? (a) an incandescent solid, (b) a flask filled with NO gas, (c) a bunsen flame vaporizing a metal or a metallic salt, (d) a solution of eosine or magenta? 9—In what does the Solar spectrum differ from these, and why? 10—What material would you use for making a galvanic battery composed (a) of one fluid (b) of two fluid cells.

MATERIA MEDICA JUNIOR YEAR.

Examiner, PROF. J. E. W. LECOURS.

1—Give reasons for rejecting the first portion of the distillate in preparing distilled water, also for ceasing the operation before the still is empty. Give the characters (test) for Aq. Distil. P.B. 2—How are the following prepared: Aquanisi; Aq. Rosaeum? 3—Explain the process for Syr. Ferri Iod. P.B. 4—What is observed on mixing Syr. Scillae and ammonium carbonate? 5—What is meant by titration? Name two preparations of P.B. to which this process is applied. 6—Name some cases in which hot water is not suitable for making a solution. What is the objection? 7—Make suggestions for the preparation of the following: R. Permangan., Potas gr. iii. Divide i. to xii. pills. 8—Explain the production of ethylic alcohol. How strong are the Sp. V.R. and Sp. Tenuier P.B.? 9—What is the opium strength of the following: Laudanum, Vin. Opu, Dover's, arom chalk with opium, paregoric? 10—What is the proportion of quinine in the wine, in the tincture of quinine? Give the strength in Alkaloid of Ext, Nuc Vomica. Tinct. Nuc Vomica.