

**PHARMACY AND POISONS****The Pharmaceutical Society of Northern Ireland**

REGULATIONS MADE ON THE 15TH DAY OF FEBRUARY, 1946, BY THE COUNCIL OF THE PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND, WITH THE APPROVAL OF THE MINISTER OF HOME AFFAIRS, UNDER SECTION THREE OF THE PHARMACY AND POISONS ACT (NORTHERN IRELAND), 1925, AS AMENDED BY THE MEDICINES, PHARMACY AND POISONS ACT (NORTHERN IRELAND), 1945.

1946. No. 37

The Council of the Pharmaceutical Society of Northern Ireland, in pursuance of the provisions of Section Three of the Pharmacy and Poisons Act (Northern Ireland), 1925, as amended by the Medicines, Pharmacy and Poisons Act (Northern Ireland), 1945, hereby makes the following Regulations ;—

## PRELIMINARY

1.—(i) These Regulations may be cited as the Pharmaceutical Society of Northern Ireland (General) Regulations, 1946, and shall come into operation on the 1st day of April, 1946.

(ii) In these Regulations unless the context otherwise requires:—

Words importing the singular number shall include the plural number.

Words importing the plural number shall include the singular number, and words importing the masculine shall include the feminine.

“ The Act ” shall mean the Pharmacy and Poisons Act (Northern Ireland), 1925.

“ The Act of 1945 ” shall mean The Medicines, Pharmacy and Poisons Act (Northern Ireland), 1945.

“ The Society ” shall mean the Pharmaceutical Society of Northern Ireland.

“ The Council ” shall mean the Council of the Society.

“ The President ” shall mean the President of the Society.

“ The Vice-President ” shall mean the Vice-President of the Society.

“ The Secretary ” shall mean the Secretary of the Society.

“ The Treasurer ” shall mean the Honorary Treasurer of the Society.

2. The Regulations made by the Council of the Pharmaceutical Society of Northern Ireland on the 11th day of March, 1936, on the 18th day of March, 1938, and on the 31st day of July, 1945, are hereby revoked, provided however that the Regulations dated the 11th March,

1936, and the appendices thereto shall remain in force and apply to candidates presenting themselves for examination before the 1st day of January, 1947.

## COUNCIL

3. The Council shall meet on the third Friday of each month, at the hour of three p.m., or on such other day or hour as the Council may from time to time decide. The Secretary shall send by post notice of each meeting to every Member of the Council at least seven days before the time of meeting. Every such notice shall contain an Agenda, and the business shall be dealt with in the order in which it appears on the Agenda. Questions shall be the last item on the Agenda and shall be dealt with after all other business shall have been transacted.

4. The President, or, in his absence, the Vice-President, on the requisition of at least seven Members of the Council, shall summon a special meeting of the Council to be held on such a day and at such an hour as shall be most convenient. The Secretary shall give each Member of the Council four clear days' notice of such meeting. No business shall be transacted at such special meeting other than that for which the meeting shall have been called, and which shall have been specified on the notice summoning the meeting.

5. If an amendment is proposed to any resolution the amendment shall first be put to the vote, and, if carried, it shall then be put as a substantive resolution, on which it then shall be competent for any Member of the Council to move an amendment, which, if carried, shall also be put as a substantive resolution, and, so on, so long as an amendment shall be proposed. If the final amendment be negatived, the original resolution shall be put to the vote.

6. All resolutions passed at meetings of the Council shall take effect as from the date on which they are passed except such resolutions as shall relate to the making, altering or abrogating of any regulation, which resolution shall take effect on such date or dates as the Council shall decide.

No notice of alteration, abrogation or addition to these resolutions shall be discussed by the Council until the expiration of one month after such notice shall have been given.

7. When a division has taken place, any Member of the Council may require that the names and numbers of the majority and minority, and of those declining to vote, be entered on the minutes.

8. The proceedings of each meeting of the Council shall be entered by the Secretary in a book kept for that purpose.

9. A fair copy of the minutes of each meeting shall be entered in a separate book by the Secretary, and be compared by the Chairman with

the original minutes, and, if correct, be confirmed by the signature of the Chairman.

10. The minutes of meetings shall contain such motions and amendments as have been proposed and adopted or negatived, with the names of proposers and seconders, but without any comments or protests annexed.

11. The election of the Secretary, Clerk, and other officers shall be by open voting, each Member of the Council declaring the name of the person for whom he votes.

12. Members and Associates of the Society may, when permitted by the Council, be present at its meetings, but shall not take part in the proceedings.

13. If in the intervals between the meetings of the Council, a Member of the Council sends a notice of motion, in writing, to the Secretary, such notice shall not appear upon the Agenda without the sanction of the President, or, in his absence, of the Vice-President, and unless the notice shall have been received seven clear days before the time of meeting.

#### SEAL

14. The Seal of the Society shall consist of a hand in a circle divided into six parts elaborated, and with the legend, "The Seal of the Pharmaceutical Society of Northern Ireland, MCMXXV."

15. The Seal shall be kept in a box which shall be locked with two different locks. The key of one lock shall be in the custody of the President or Vice-President, and the key of the other in the custody of the Secretary. The box shall be kept in a safe on the premises of the Society.

16. The Seal shall not be affixed to any deed, instrument, or certificate, unless in pursuance of a resolution of the Council entered in the Minute Book. The affixing of the Seal shall be attested by the signatures of the President or Vice-President and Secretary.

#### SECRETARY

17. The Secretary shall attend at the office of the Society at such times as may be appointed by the Council. He shall attend, and take a record of the proceedings, at all meetings of the Council and Committees, and at the Annual Meetings of the Society. He shall also attend examinations, elections, etc., conducted by the Society. He shall make a report of all matters that may come under his notice for the information of the Council and Committees. He shall be responsible for the safe custody of all the books, documents and other property of the Society. He shall consult, and act upon the instructions of the President, or Vice-President, on any business requiring attention

between the various meetings. He shall have authority over the clerks and all servants of the Society, whose wages he shall pay. He shall receive such a sum in advance as the Council may consider sufficient to pay the current expenses of his office.

## TREASURER

18. The Treasurer shall be elected from among the Members of the Council.

19. It shall be the duty of the Treasurer to open an account in the Ulster Bank, Limited, and to lodge all moneys as soon as possible after he receives them. He shall keep an account of all moneys received, and shall pay all accounts as ordered by the Council. All payments shall be made by cheque, which shall be signed by the President or Vice-President, the Treasurer and the Secretary.

20. The Treasurer shall submit his financial statement to the Council at its meeting in September in each year, and also to the Annual Meeting of the Society.

21. The Accounts shall be audited before the Annual Meeting by the official auditors of the Society who shall affix their signatures to the financial statement.

## FINANCE

22. The Treasurer's alphabetical list of Members, Associates and Students who have paid their Retention Fees shall be open for inspection at each Annual Meeting.

23. The financial year shall commence on 1st September, and shall terminate on 31st August in the following year.

24. All donations of money to the Society shall be kept as a reserve fund, to be applied as a General Meeting of the Society may direct.

25. No sum of money exceeding five pounds shall be voted or ordered for payment (except for rent, or fixed salaries) without notice having been given in the Agenda of the next monthly meeting of the Council.

26. All sums of money received by the Treasurer in any year by way of penalties under the provisions of sub-section (5) of Section 35 of the Act of 1945 shall be applied towards defraying the law costs and expenses incurred by the Society during that year, and the surplus (if any) shall form part of the general funds of the Society.

## COMMITTEES

27. The Council shall appoint five Committees:—General Purposes, Law, Education, Finance, and House—three Members to form a quorum. The composition of the Committees shall be in the following

proportions :—Four Pharmaceutical Chemists, one Chemist and Druggist or Registered Druggist, and one nominated Member. The President and Vice-President shall be ex-officio Members of all Committees. The President shall preside at all meetings of Committees, or in his absence the Vice-President. If the President and Vice-President are both absent, a Chairman shall be chosen by the Members present.

#### ANNUAL MEETING

28. The Annual Meeting of the Society shall be held on the first Monday in October, or any other date within five days, in each year in such place as the Council shall determine.

29. The election of Members to replace the retiring Members of the Council shall take place at the Annual Meeting.

30. In case of an equality of votes, the President or Chairman of the Annual Meeting shall have a casting vote.

31. No Member or Associate of the Society shall be qualified either to stand for a seat on the Council or to propose or second any candidate for a seat on the Council unless he shall have paid his Retention Fee for the current year. Any candidature which does not fulfil the above conditions shall be null and void.

32. No motion shall be moved at the Annual Meeting of the Society without fourteen days' previous notice in writing having been given to the Secretary, which notice shall be inserted in the summonses convening such meeting.

33. A new candidate for a seat on the Council shall be proposed and seconded by a Member or Associate of the Society; the nomination paper, together with a written undertaking by such candidate that he will act if elected, shall be lodged with the Secretary by noon at least fourteen clear days before the Annual Meeting. The representatives of Pharmaceutical Chemists shall be replaced by Pharmaceutical Chemists, and those of the Druggists shall be replaced by Chemists and Druggists or Registered Druggists subject to such alterations in numbers as may be necessary pursuant to the provisions of Article 3 of Part III. of the First Schedule to the Act.

34. A retiring Member of the Council who desires to stand for re-election need not be proposed and seconded by a Member or Associate of the Society, but shall notify the Secretary in writing by noon at least fourteen clear days before the Annual Meeting of his intention to stand for re-election.

35. Voting papers shall be sent by post to the Registered Address of every Member and Associate of the Society at least seven clear days

before the Annual Meeting. Every such voting paper shall contain the names of such retiring Members as are standing for re-election, with a list of their attendances at the meetings of the Council and Committees since last elected or appointed, and the names and qualifications of all new candidates, together with the names of their proposers and seconders : Provided that when the number of candidates is equal to or less than the number of vacancies to be filled no voting papers shall be issued, but the Chairman of the Annual Meeting shall declare the candidate duly elected.

36. Each voter shall—

- (a) erase from the voting paper the names of those for whom he does not intend to vote ;
- (b) leave no more names than are sufficient to fill the vacancies ;
- (c) write his name and address on the outside of the envelope in which he returns his voting paper ; and
- (d) transmit his voting paper under cover as aforesaid to the Secretary so that it shall be received by him not later than noon on the morning of the election.

The voting paper of every voter who fails to comply with any of the above requirements shall be void.

37. The scrutineers of the ballot shall be two Members of the Council appointed for the purpose at the September meeting, together with the President or Vice-President. They shall meet at noon on the day of the Annual Meeting to count the votes and to deliver to the Secretary a record of the voting. The proposer and seconder of each new candidate may be present if they so desire. Voting papers shall not be opened save by, or in the presence of, the scrutineers. The names of those elected shall be declared by the Chairman at the Annual Meeting.

#### READING OF PAPERS

38. The Council shall have power to arrange from time to time for the reading of papers or the delivery of lectures on subjects of professional interest, and to defray all expenses incidental thereto.

#### HONORARY MEMBERS

39. The election of Honorary Members of the Society shall be subject to the following provisions :

- (a) No person, save a Member of the Council, shall be entitled to propose or second a person for honorary membership.
- (b) The Council shall not proceed to the election of an Honorary Member unless notice of motion shall have been given at a meeting of the Council prior to that on which the election takes place.

## REGISTRATION AND RETENTION

40. The fees payable for registration under Section 7 of the Act as a Pharmaceutical Chemist and as an apprentice shall be Two Guineas.

41. Where the name of any registered person has been struck off the Register, the fee payable for the restoration of such name to the Register shall be One Guinea.

42. No recommendation for the erasure of a name from the Register shall be made by the Council unless a notice of the intention to bring forward such recommendation shall have appeared on the Agenda.

43. The Retention Fee under Section 8 of the Act of 1945 payable annually by a Member of the Society in respect of the retention of his name on the Register, shall be One Guinea; by an Associate of the Society, One Guinea, and by a Student of the Society, Five Shillings. The Retention Fee shall be due and payable on the first day of September in each year. Provided that any Member or Associate who became a Life Member or Life Associate prior to the 24th of May, 1945, shall be exempt from liability to pay a Retention Fee.

44. The Secretary shall send to any Member, Associate or Student who has not paid his Retention Fee on or before the 1st day of September in each year in respect of which such fee is payable, a demand for payment thereof, addressed to his address on the Register.

45. The penalty under sub-section (4) of Section 8 of the Act of 1945 (for default in payment of the Retention Fee), shall be :

- (a) in respect of a Member or Associate, the sum of Ten Shillings and Sixpence; and
- (b) in respect of a Student, the sum of Five Shillings.

46. The fee to be paid in respect of the issue of a Certificate of Registration, under the proviso to sub-section (1) of Section 9 of the Act of 1945, by a person who has satisfied the Secretary that the original Certificate has been lost or destroyed, shall be Five Shillings.

## APPRENTICES

47. A candidate for the preliminary certificate of apprenticeship to a Pharmaceutical Chemist shall furnish the Council with documentary evidence of having passed one of the following examinations :—

- (1) The Matriculation Examination of any University in the United Kingdom.
- (2) The Secondary School Senior Certificate Examination of the Ministry of Education of Northern Ireland.

And he must have passed in the following subjects :—

English, Mathematics and three other subjects from the following list :—

Latin, Greek, French, German, Domestic Economy, Modern History, Geography, Biology, Chemistry, Physics or Mechanics.

48. Upon acceptance of a candidate the Council shall require him to forward to the Secretary :—

- (1) a fee of Two Guineas in respect of the grant of the preliminary Certificate of Apprenticeship to a Pharmaceutical Chemist ;
- (2) a fee of Two Guineas for registration as prescribed in Regulation 40 ;
- (3) a copy of his Certificate of Birth ;

and on receipt of same the preliminary Certificate of Apprenticeship to a Pharmaceutical Chemist will be forwarded to the Candidate.

49. As and from 1st day of June, 1946, Articles of Pupilage shall be entered into between employers and apprentices in respect of persons engaged as apprentices on and after that date and shall contain the provisions of the Draft Articles of Pupilage set out in Appendix C hereof or provisions to the like effect.

50. His employers shall so arrange the hours of work of an apprentice during each of the first, second and third years of apprenticeship as to enable the apprentice to attend courses of instruction for at least one whole day per week at an Institution approved by the Council.

51. During the first, second and third years of apprenticeship an apprentice shall be required to work for his employer for not more than 30 hours in any week in which the apprentice is in attendance at an approved institution, and for not more than 42 hours in any other week, provided that practical instruction in accordance with the Regulations appended to the Articles of Pupilage shall be given by the employer within the period of 30 hours or 42 hours respectively.

52. Every employer shall during the fourth year of apprenticeship allow an apprentice to undergo a course of instruction during the day-time at an Institution approved by the Council for the Examinations as prescribed in the Pharmacy and Poisons Acts (Northern Ireland), 1925 and 1945 of not less than 25 hours per week in each term of a session of three terms in the subjects of the examinations. During these terms the apprentice shall not be required to work for his employer so long as his attendance at the approved Institution is regular and satisfactory. At other times of the year the apprentice shall be required to work for his employer for not more than 42 hours per week.



## REGULATIONS FOR THE FINAL PART I QUALIFYING EXAMINATION

53. The Examination shall be held twice yearly commencing in or about the third week in June and in or about the first week in December.

54. The subjects of the Examination shall be Chemistry, Physics and Biology. The Examination shall be conducted in accordance with the syllabus set out in Appendix A of these Regulations.

55. When a student applies to enter for the Examination for the first time he shall lodge with the Secretary a Certificate on the official form signed by the principal or other duly authorised person of an Institution approved by the Council, that he has attended an approved course of instruction in Chemistry, Physics and Biology of not less than 750 hours' duration.

56. A student who satisfies the Board of Examiners in the subjects in which he presents himself for Examination shall have passed the Examination.

57. A person who has submitted to the Council documentary evidence of his having passed the Intermediate Examination of The Queen's University, Belfast, in all the subjects prescribed in Appendix A shall be deemed to have passed Part I of the Final Qualifying Examination.

58. The fee to be paid for entry to the Examination shall be :—

- |                                 |     |              |
|---------------------------------|-----|--------------|
| (a) for the first time of entry | ... | Six Guineas  |
| (b) for any subsequent entry    | ... | Four Guineas |

and shall be paid when applying to enter for the Examination.

## REGULATIONS FOR THE FINAL PART II QUALIFYING EXAMINATION

59. The Examination shall be held twice yearly commencing in or about the third week in June and in or about the first week in December.

60. The subjects of the Examination shall be Pharmaceutical Chemistry, Pharmacognosy, Pharmaceutics, Physiology and Forensic Pharmacy. The Examination shall be conducted in accordance with the syllabus set out in Appendix B of these Regulations.

61. A student will not be permitted to enter for the Examination unless he :—

- (1) has passed the Part I Final Qualifying Examination ;
- (2) produces a declaration made and signed by him on the official form and countersigned by the Pharmacist who in the opinion of the Secretary is able to verify from personal knowledge the facts set out in the declaration that he has undergone a practical course of instruction in accordance with Regulation 51 hereof.

Provided that if a Candidate—

- (a) has completed his apprenticeship before the 1st day of June, 1946, the conditions of apprenticeship shall be deemed to have been complied with, if he has complied with Regulation 60 of the Regulations dated 11th day of March, 1936 ;
  - (b) has not completed his apprenticeship on 1st day of June, 1946, the conditions of apprenticeship shall be deemed to have been complied with, if he has completed the period up to the 1st day of June, 1946, in accordance with Regulation 60 of the Regulations dated 11th day of March, 1936, and thereafter has complied with the conditions set forth in Regulation 51 of these Regulations.
- (3) produces a Certificate on the official form signed by the Principal or other duly authorised person of an Institution approved by the Council for giving instruction for the Examination, that the student has attended at the Institution an approved course of instruction of not less than 25 hours weekly during each term of a session of three terms in Pharmaceutical Chemistry, Pharmacognosy, Pharmaceutics, Physiology and Forensic Pharmacy, and that he has completed the work of the course to the satisfaction of the Principal or other duly authorised person.

62. A student who satisfies the Board of Examiners in the subjects of examination shall be granted by the Board a Certificate entitling him to be registered as a Pharmaceutical Chemist under the Pharmacy and Poisons Acts (Northern Ireland), 1925 and 1945.

63. A student who has passed the Final Part I Qualifying Examination, and submits to the Board of Examiners documentary evidence that he has passed the Examination in all the subjects of Final Part I for the Bachelor of Science in Pharmaceutics of The Queen's University, Belfast, may present himself for examination in the subject of FORENSIC PHARMACY and if he satisfies the Board of Examiners in this subject he shall be granted by the Board a Certificate entitling him to be registered as a Pharmaceutical Chemist under the Pharmacy and Poisons Acts (Northern Ireland), 1925 and 1945.

64. The fee to be paid for entry to the Examination shall be :—

for the first time of entry	...	Twelve Guineas
for any subsequent entry	...	Six Guineas

and shall be paid when applying to enter for the Examination.

#### GENERAL

65. Application to enter for either Part I or Part II of the Final Qualifying Examination shall be made to the Secretary on or before the 21st May and the 1st November for the Examination commencing in

the month following, accompanied by the prescribed fee. Students will receive due notice of the dates and times on which they will be required to present themselves for Examination.

66. A student who has entered for either the Part I or Part II of the Final Qualifying Examination, but fails to present himself and submits proof satisfactory to the Council that his absence was due to illness or other unavoidable cause shall receive back the fee paid.

67. A student who has failed to satisfy the Board of Examiners owing to weakness in one subject only of either Part I or Part II of the Final Qualifying Examination may present himself for examination in that subject only, if permitted by the Board so to do. In such case the student shall produce proof satisfactory to the Council that he has complied with such conditions as the Board of Examiners may have prescribed.

#### EXAMINERS

68. Where any Examiner appointed by the Council is unable to conduct the examination at the proper time, the President, or in his absence the Vice-President, shall have power to appoint a substitute who shall for that examination only discharge the duties of the Examiner originally appointed: Provided that such appointment shall be subject to the approval of the Minister of Home Affairs.

Sealed with the Common Seal of the Pharmaceutical Society of Northern Ireland this 15th day of February, One Thousand Nine Hundred and Forty-six, in the presence of

(L.S.)

(Signed) *James M'Dowell*, President.

(Signed) *D. L. Kirkpatrick*, Secretary.

I, the Right Honourable EDMOND WARNOCK, Minister of Home Affairs for Northern Ireland, in pursuance of the powers vested in me by sub-section (2) of Section three of the Pharmacy and Poisons Act (Northern Ireland), 1925, hereby approve of the foregoing Regulations.

Dated this 25th day of March, 1946.

(Signed) *Edmond Warnock*,

Minister of Home Affairs.

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#### APPENDIX A.

#### SYLLABUS FOR THE PRELIMINARY SCIENTIFIC EXAMINATION

#### CHEMISTRY

(Examination in this subject comprises one written session and one practical session each of three hours' duration. The Examiners are not precluded from asking Candidates oral questions during the practical session).

NOTE.—The Candidate is expected to solve simple problems relating to the weight and volume under different conditions of temperature and pressure of elements and compounds concerned in chemical reactions. The whole of the syllabus in chemistry to be treated in an elementary manner and as far as possible experimentally:

The chief characteristics of chemical action, the distinction between elements and compounds; the laws of chemical combination by weight and volume; the hypothesis of Avogadro; the Kinetic theory of gases; the theory of dilute solutions; the phenomena of ionisation; conductivity; strength of acids and bases; solubility product; osmotic pressure; Raoult's Law; chemical equilibrium and the law of mass action; endothermic and exothermic reactions; equivalent weight; atomic weight and molecular weight; chemical formulae and nomenclature; valency; the distinction between metals and non-metals, and the periodic classification of the elements.

The general characters of the non-metals; the chief methods of preparation and the typical reactions of the following non-metallic elements and compounds; hydrogen, oxygen, ozone, water, hydrogen peroxide; chlorine, bromine and iodine and their compounds with hydrogen and oxygen; fluorine, hydrofluoric acid; nitrogen, ammonia, and ammonium compounds, the oxides of nitrogen, nitrous acid, nitric acid, sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid; phosphorus, phosphine, the oxides, and oxy-acids of phosphorus, the chlorides of phosphorus; carbon, its oxides; silicon, silica; boron, boric acid.

The general characters and classification of the metals, and the general methods of forming oxides and salts; the sources, the general methods of extracting and the chief properties of the undermentioned metals, also the modes of preparation and properties of their principal compounds—potassium, sodium, lithium, barium, strontium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, nickel, cobalt, arsenic, antimony, tin, copper, cadmium, bismuth, lead, silver, mercury, gold and platinum.

#### PRACTICAL EXAMINATION

The Candidate must be prepared:—

To identify by chemical tests the more important non-metallic elements and their compounds, as well as the metals and salts indicated in the foregoing list.

To analyse a mixture containing not more than two basic and two inorganic acid radicles.

To be able to weigh accurately on a standard analytical balance involving the use of a rider.

To show a knowledge of the principles of volumetric analysis and to prepare, standardise, and use volumetric solutions of inorganic acids, alkalies, potassium permanganate, and silver nitrate.

The Candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidates at the close of the examination.

#### P H Y S I C S

(Examination in this subject comprises one written session and one practical session each of three hours' duration. The Examiners are not precluded from asking Candidates oral questions during the practical session).

Velocity, acceleration, mass, momentum, force, work, energy, friction, gravitation, centre of gravity; simple machines; pressure in liquids, the siphon, water pumps; principle of Archimedes, Boyle's Law, compression and exhaust pumps; atmospheric pressure; surface tension; diffusion, osmosis.

Temperature; thermometry; changes in volume of solids, liquids, and gases with alterations of temperature; quantity of heat, specific heat; change of state, latent heat; melting and boiling points; vapour pressure, hygrometry; conduction, convection and radiation; laws of cooling; relation between heat and work.

Photometry; laws of reflection and refraction; formation of images by plane and spherical mirrors and lenses; the eye as an optical instrument; action of prisms on light; dispersion, colour; the nature and properties of ultra-violet radiation.

Simple phenomena of magnetism; magnetic field, lines of force; law of force; terrestrial magnetism.

Simple phenomena of static electricity ; potential ; influence machines ; capacity ; parallel plate condensers.

Electric currents ; magnetic, chemical and heating effects ; primary and secondary cells ; current strength ; electromotive force ; Ohm's Law ; resistance, specific resistance ; galvanometers, ammeters and voltmeters ; metre bridge ; potentiometer ; induced currents.

#### PRACTICAL EXAMINATION

The Candidate must be prepared to conduct simple exercises illustrating the above, including the following :

The use of vernier, screw-gauge, balance, hydrometer ; simple pendulum. The determination of volumes by weighing in air and water, specific gravities of solids and liquids ; the verification of Boyle's Law.

The determination of coefficients of expansion, melting points, boiling points, specific heats, latent heats, dew point.

Tracing paths of rays of light ; the determination of refractive indices by slab and prism ; focal lengths of mirrors and lenses.

Tracing lines of magnetic force. The period of oscillation of a magnet ; comparisons of magnetic moments and of field strengths.

The comparison of electromotive forces and of resistances. The use of galvanometer, ammeters and voltmeters. Electrochemical equivalents.

The Candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

#### BIOLOGY

(Examination in this subject comprises one written session of three hours' duration covering Parts I and II, and two practical sessions (the one for Part I, the other for Part II), each of three hours' duration. The Examiners are not precluded from asking Candidates oral questions during the practical session).

##### PART I — BOTANY

1. The external morphology of Dicotyledons and Monocotyledons. The modifications of plant-organs in relation to food-storage, vegetative reproduction and climbing.

2. Cellstructure ; the division of the cell and of the nucleus. The anatomy and histology of roots, stems and leaves of Angiosperms and the Pine. Meristems and secondary growth, including the origin and characters of cork.

3. The structure of the Angiospermous flower. The commoner variations in floral structure ; with special reference to their use in classification. Pollination ; fertilisation, its significance and consequences. The principal categories of fruits and seeds. Dispersal of fruits and seeds. Germination.

4. The elements of plant physiology and the relation between structure and function. The relation of the plant to the soil ; the nitrogen cycle. Absorption of water and mineral salts ; transpiration and conduction of water. Photosynthesis. Translocation and storage of foods ; enzymes and enzyme-action. Respiration and fermentation, energy relations. Growth and irritability, as illustrated by tropic movements. Saprophytism and parasitism. The differences between plants and animals.

5. A general knowledge of the chief divisions of the Vegetable Kingdom, as exemplified by the following :—

Spirogyra, structure and life-history. Fucus, general habit, life-history, excluding details of vegetative structure. Vegetative structure, nutrition, asexual reproduction and economic importance of Yeast, Bacteria and the Common Moulds, Mucor, Penicillium, Aspergillus. Structure of a Thalloid Liverwort and a Moss so far as it can be observed with a good hand lens. Dryopteris, life-history, including detailed knowledge of reproduction ; a knowledge of its vegetative anatomy will not be required. Pinus life-history and reproduction. Angiosperm (see para. 3).

6. The elementary facts of heredity (simple Mendelian segregation and independent assortment), evolution (morphological evidences and the principle of natural selection), variation (fluctuation and mutations).

## PRACTICAL EXAMINATION

The candidate must be prepared :—

1. To dissect, and to describe with labelled drawings, any plant or part of a plant, subject to the limitations prescribed in the syllabus above.
2. To make microscopical preparations, using simple staining methods only, and to prepare accurate drawings from these preparations. Special importance is attached to accurate drawing and identification of tissues under a high power.
3. To describe with labelled drawings and to identify preparations provided.
4. To conduct, or comment on, experiments illustrating the elements of plant physiology.

The Candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

## PART II. — ZOOLOGY

1. The structure and physiology of the animal cell. Cell division. The differences between plants and animals.
2. The general structure, physiology and life history of the following :—Amoeba and Paramecium—non-cellular (unicellular) organisations ; Hydra and Earthworm—diploblastic and triploblastic types respectively ; Cockroach—an insect type ; Dogfish, Frog and Rabbit—vertebrate types. The elementary morphology and physiology of these animals to be considered comparatively. A knowledge of vertebrate musculature and details of the skeleton of the frog and dogfish will not be required.
3. An elementary knowledge of the general characters, histology and function of tissues and organs as illustrated by epithelia, blood and lymph, nervous, muscular and areolar connective tissues, cartilage and bone, the intestine of the frog, the liver and kidney of the mammal, the skin of the frog and mammal, spinal cord of mammal.
4. Parasitism as illustrated by the life histories of Monocystis, Malarial Parasite and Tapeworm.
5. The general phenomena of sexual and asexual reproduction as shown in the life histories of the animals named above. The history and characters of the germ cells. An outline of the development of the frog up to the formation of the three primary germ layers and a general account of its metamorphosis.
6. The elementary facts of heredity (simple Mendelian segregation and independent assortment), evolution (morphological evidences and the principle of natural selection), variation (fluctuation and mutations).

## PRACTICAL EXAMINATION

The practical work will be based on the above syllabus and include :—

1. The identification and description of microscopical preparations of Amoeba, Paramecium, Monocystis, Hydra, Tapeworm, Earthworm, the mouth parts and tracheae of the Cockroach, blood, cartilage, bone, muscle, spinal cord, intestine of Frog, the liver and kidney of the mammal and skin of frog and mammal.
2. The general external features and internal anatomy as shown in special dissections of the following types :
  - (a) Earthworm : general dissection and, in more detail, the alimentary canal and nervous system.
  - (b) Cockroach : general dissection and, in more detail, the alimentary canal and nervous system.

- (c) Dogfish : alimentary canal ; heart, afferent and efferent branchial vessels ; brain and cranial nerves ; examination of thick cross-sections of the pharynx and tail.
- (d) Frog : alimentary canal ; heart and principal vessels of the arterial and venous systems ; central nervous system and spinal and sympathetic nerves ; urogenital system.
- (e) Rabbit : alimentary canal ; lungs and principal vessels of the arterial and venous systems ; urogenital system.
- (f) Sheep's heart.
3. The rabbit skeleton (including the salient features of the skull).
4. The preparation of simple permanent stained mounts.
5. The examination of whole mounts and representative sections through the frog from the early stages of development to the time of the first appearance of the external gills.

The Candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

#### APPENDIX B

### SYLLABUS FOR THE PHARMACEUTICAL CHEMIST QUALIFYING EXAMINATION

#### PHARMACEUTICAL CHEMISTRY

(Examination in this subject comprises one written session and one practical session each of three hours' duration. The Examiners are not precluded from asking Candidates oral questions during the practical session).

The general principles of inorganic chemistry as illustrated by the elements and compounds in frequent use in pharmacy ; the preparation, purification for pharmaceutical use, and properties of such elements and compounds.

The general principles of organic chemistry illustrated as far as possible by the types of compounds indicated in the following paragraph.

The general characters, the methods of preparation, and the properties of the main types of aliphatic substances and the simpler aromatic compounds containing a single benzene ring with special reference to those in frequent use in pharmacy.

The principles underlying the tests for purity and the chemical assays of the British Pharmacopoeia.

The principles underlying the practical work of this syllabus.

#### PRACTICAL EXAMINATION.

The Candidate must be prepared to conduct ordinary chemical operations as applied to substances in frequent use in pharmacy, including the following :—

The preparation of organic compounds such as chloroform, ether, acetaldehyde, ethyl acetate, nitrobenzene and acetanilide.

The identification of organic compounds including : acids and their salts ; alkaloids ; carbohydrates ; glycosides ; aliphatic compounds of simple constitution.

The identification of the elements and characteristic groups present in organic compounds and the reference of organic compounds to their classes.

The determination of melting-points, boiling-points and specific gravities.

The performance of the chemical tests used to exclude or limit impurities in substances included in the British Pharmacopoeia.

The quantitative determination of the alkaloidal content of solutions of alkaloidal salts.

The volumetric methods of assay of the British Pharmacopoeia excluding the alkaloidal assays and excluding the more difficult methods.

The Candidate will have the opportunity during the practical examination of consulting the British Pharmacopoeia. He will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

#### PHARMACOGNOSY

(Examination in this subject comprises one written session of three hours' duration and one practical session of two hours' duration. The Examiners are not precluded from asking Candidates oral questions during the practical session).

The cultivation, collection, preparation for the market, the commerce in and the storage of crude drugs as illustrated by the drugs named in the List of Drugs below.

The changes occurring in the drying, storage and comminution of drugs as illustrated by the drugs named in the List of Drugs below.

The macroscopical characters, the biological and geographical sources, the commercial varieties and adulterants, and the constituents of the following drugs:—

#### LIST OF DRUGS—

<i>Acacia</i>	<i>Ergota</i>
<i>Aconitum</i>	<i>Filix Mas</i>
<i>Adeps</i>	<i>Foeniculum</i>
<i>Adeps Lanae</i>	<i>Gelatinum</i>
<i>Agar</i>	<i>Gentiana</i>
<i>Aloe</i>	<i>Glycyrrhiza</i>
<i>Amylum</i>	<i>Hamamelis</i>
<i>Anethum</i>	<i>Hyoscyamus</i>
<i>Anthemis</i>	<i>Ipecacuanha</i>
<i>Asafoetida</i>	<i>Ipomoea</i>
<i>Aurantii Cortex</i>	<i>Jalapa</i>
<i>Balsamum Peruvianum</i>	<i>Krameria</i>
<i>Balsamum Tolutanum</i>	<i>Limonis Cortex</i>
<i>Belladonnae Folium</i>	<i>Linum</i>
<i>Belladonnae Radix</i>	<i>Lobelia</i>
<i>Benzoinum</i>	<i>Mel</i>
<i>Buchu</i>	<i>Myristica</i>
<i>Calumba</i>	<i>Myrrha</i>
<i>Cannabis</i>	<i>Nux Vomica</i>
<i>Cantharis</i>	<i>Opium</i>
<i>Capsicum</i>	<i>Podophyllum</i>
<i>Cardamomum</i>	<i>Podophyllum Indicum</i>
<i>Carum</i>	<i>Prunus Serotina</i>
<i>Caryophyllum</i>	<i>Quassia</i>
<i>Cascara Sagrada</i>	<i>Quillaja</i>
<i>Catechu</i>	<i>Rheum</i>
<i>Cera Flava</i>	<i>Sabina</i>
<i>Cinchona</i>	<i>Scilla</i>
<i>Cinnamomum</i>	<i>Senega</i>
<i>Coca</i>	<i>Sennae Folium</i>
<i>Coccus</i>	<i>Sennae Fructus</i>
<i>Colchici Cormus</i>	<i>Serpentaria</i>
<i>Colchici Semen</i>	<i>Stramonium</i>
<i>Colocynthis</i>	<i>Strophanthus</i>
<i>Colophonium</i>	<i>Styrax</i>
<i>Copaiba</i>	<i>Tamarindus</i>
<i>Coriandrum</i>	<i>Tragacantha</i>
<i>Creta</i>	<i>Valeriana</i>
<i>Digitalis Folium</i>	<i>Zingiber</i>



The types and significance of standards included in the British Pharmacopoeia and the British Pharmaceutical Codex for drugs named in the above list. The diagnostic qualitative chemical tests included in the British Pharmacopoeia and the British Pharmaceutical Codex for drugs named in the above list.

The biological and geographical sources, methods of extraction and constituents of, the following oils :—

<i>Oleum Caryophylli</i>	<i>Oleum Olivae</i>
<i>Oleum Limonis</i>	<i>Oleum Ricini</i>
<i>Oleum Morrhuæ</i>	

The microscopy of the starches of maize, rice, potato and wheat.

The microscopy of the calcium oxalate in the following drugs :—

<i>Belladonnæ Folium</i>	<i>Quillaja</i>
<i>Belladonnæ Radix</i>	<i>Rheum</i>
<i>Cascara Sagrada</i>	<i>Scilla</i>
<i>Hyoscyamus</i>	<i>Sennæ Folium</i>
<i>Quassia</i>	<i>Stramonium</i>

The microscopy of the epidermal trichomes in the following drugs :—

<i>Belladonnæ Folium</i>	<i>Lobelia</i>
<i>Cannabis</i>	<i>Nux Vomica</i>
<i>Digitalis Folium</i>	<i>Sennæ Folium</i>
<i>Hamamelis</i>	<i>Stramonium</i>
<i>Hyoscyamus</i>	<i>Strophanthus</i>

The microchemical tests for cellulose and lignin.

The nature, biological and geographical sources of, and the microchemical tests for the fibres used for surgical dressings.

#### PRACTICAL EXAMINATION

The Candidate must be prepared :—

To examine (excluding quantitative determinations), dissect, and describe, in the entire or broken condition, drugs of good commercial quality, named in the List of Drugs above, and to identify them by means of macroscopical characters and by qualitative chemical tests, and to state their biological and geographical sources.

To investigate the microscopy of calcium oxalate and epidermal trichomes in so far as it is included in the foregoing syllabus.

To examine, identify and report on the fibres used for the following unmedicated surgical dressings : bandages, gauzes, lints, tissues, tows and wools.

To identify microscopically the starches of maize, rice, potato and wheat, mixed and unmixed, and to detect starch in drugs by microscopical and microchemical tests.

The Candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

#### PHARMACEUTICS

(Examination in this subject comprises one written session and one practical session each of three hours' duration and a short oral period. The Examiners are not precluded from asking Candidates oral questions during the practical session).

The principles involved in pharmaceutical operations, including a consideration of the pharmaceutical application of the following :—

Vapour pressure, solution, ionisation, hydrogen ion concentration, osmotic pressure, hydrolysis, viscosity, surface tension, distillation, sublimation, disperse systems.

The galenic preparations included in the British Pharmacopoeia ; the conditions for their storage, changes liable to occur in these preparations and the means of preventing them, including the use of bacteriostatics and fungistatics.

The principles underlying the preparation of sterile medicaments and materials.

The preparation of sera, vaccines and bacterial derivatives included in the British Pharmacopoeia.

The biology of bacteria in so far as it affects the contents of this syllabus.

Surgical dressings and the principles underlying their standardisation.

The interpretation of prescriptions and the translation of Latin prescriptions into English. The maximum doses of medicaments included in the British Pharmacopoeia.

The principles underlying the practical work of this syllabus.

#### PRACTICAL EXAMINATION

The Candidate must be prepared to conduct ordinary pharmaceutical operations, including the following :—

The making of the galenic preparations included in the British Pharmacopoeia, the dispensing of prescriptions, the detection of unusual doses and the completion of preparations in a proper manner.

The preparation and dispensing of sterile medicaments and materials.

The Candidate will have the opportunity during the practical examination of consulting the British Pharmacopoeia. He will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the Candidate at the close of the examination.

#### PHYSIOLOGY

(Examination in this subject comprises one written session of three hours' duration).

1. An elementary knowledge of the basic facts in the branches of physiology listed below, and of the main evidence by which these facts were established :—

- (i) The simple biochemical properties of the main components of foods and tissues.
- (ii) Where necessary for an elementary explanation of function, the structure of muscle, nerve, salivary glands, stomach, small intestine, colon, pancreas, liver, heart, blood vessels, blood, lung, reproductive systems, kidney, skin, spinal cord and endocrine organs.
- (iii) The properties of the different types of muscle.
- (iv) General arrangement of the nervous system ; a brief survey of the function of its different parts ; reflex action ; the autonomic nervous system.
- (v) The mechanism of vision.
- (vi) The composition, properties and functions of the blood.
- (vii) The functions and control of the heart and of the peripheral blood vessels.
- (viii) Mechanics of respiration ; the control of pulmonary ventilation ; gaseous interchange at the lungs and tissues. Artificial respiration.
- (ix) The control and actions of the digestive juices. The movements of the alimentary tract. The absorption and utilisation of food stuffs. The principles involved in constructing a balanced diet.
- (x) The origin and control of the body heat.
- (xi) The formation and composition of the urine.
- (xii) The functions of the endocrine glands.
- (xiii) The general principles underlying the biological assays of the British Pharmacopoeia (excluding the assays of sera, vaccines and bacterial derivatives).

#### FORENSIC PHARMACY

The Candidate will be required to possess such information concerning the following enactments and the regulations made under them as is applicable to the practice of pharmacy in shop and hospital :—The Dangerous Drugs Acts, The Venereal Disease Act, The Therapeutic Substances Act, The Methylated Spirits and Ether Regulations and Restrictions, the sale of abortifacients, The Pharmacy and Poison Acts (Northern Ireland), 1925 and 1945, Acts relating to National Health Insurance, The Shops Acts, The Food and Drugs Act, Protection of Animal Acts.

APPENDIX C  
DRAFT ARTICLES OF PUPILAGE

It is Agreed between .....  
of .....  
(hereinafter called " the Employer ") of the first part  
..... of .....  
.....  
(hereinafter called " the Pupil "), son or ward of .....  
..... of the second part, and the said  
..... of .....  
.....  
(hereinafter called " the Parent or Guardian ") of the third part, as follows :—

1. THE PUPIL for himself and THE PARENT OR GUARDIAN as surety for him jointly and severally bind themselves that the Pupil shall honestly, faithfully and diligently serve the Employer in his business of Dispensing Chemist for a period of Four years from the ..... day of ....., Nineteen hundred and ....., which day is declared to be the commencement of the pupillage of the Pupil that the Pupil always shall keep the Employer's secrets and shall obey his lawful commands, and shall not without authority make copies of any papers or books belonging to the Employer ; that the Pupil shall not absent himself from the Employer's service without leave, shall behave himself civilly and respectfully to the Employer and his customers, shall observe the Regulations appended to these Articles, shall attend such classes as may be determined by the Council of the Pharmaceutical Society and that the Pupil shall both during and outside of business hours abstain from all illegal practices.

2. AND THE EMPLOYER binds himself to instruct the Pupil in his business of Dispensing Chemist ; to afford the Pupil such reasonable opportunities and work as may be required to enable him to learn the same ; to observe the Regulations appended to these Articles ; to grant the Pupil such facilities as may be necessary for the Pupil to attend such classes as may be determined as aforesaid ; on their due completion to discharge these Articles in the form provided and if in his opinion correct, to verify the facts set out in the declaration regarding the practical course of study required by the Regulations to be made by the Pupil when entering for either of the Qualifying Examinations.

3. AND THE EMPLOYER further binds his executors and administrators in the event of the death of the Employer before the expiration of these Articles, to make provision for the completion by the Pupil of the remainder of the pupillage under conditions acceptable under the aforementioned Regulations.

4. IN WITNESS WHEREOF the parties to these Articles have set their hand and seals this ..... day of .....  
Nineteen hundred and .....

Signed, Sealed and Delivered by the  
said Employer in presence of

.....  
(EMPLOYER)

.....  
(Witness)

Occupation .....

(L.S.)

Address .....

Signed, Sealed and Delivered by the  
said Pupil in the presence of

.....  
(PUPIL)

.....  
(Witness)

Occupation .....

(L.S.)

Address .....

Signed, Sealed and Delivered by the  
said Parent or Guardian in the  
presence of

.....  
(PARENT OR GUARDIAN)

.....  
(Witness)

Occupation .....

(L.S.)

Address .....

In the foregoing Articles words importing the singular number shall include the plural and vice versa, words importing the masculine gender the feminine, and words importing persons shall include Firms and Corporations, unless there be anything in the context repugnant to such construction.

DISCHARGE.

I, ....., in respect that.....  
has served me in terms of the foregoing Articles during the whole period therein stipulated, do hereby discharge him and also.....of all obligations under the said Articles.

IN WITNESS WHEREOF I have set my hand this..... day of.....  
Nineteen hundred and.....

APPENDIX TO DRAFT ARTICLES OF PUPILAGE

REGULATIONS FOR PRACTICAL COURSE OF STUDY

1. The Employer shall from time to time, if requested, furnish such information as may be required by the Society about the staff, accommodation, equipment and work of the shop or drug department of a wholesale chemist or druggist where the pupilage is being served and shall permit one or more representatives of the Society to inspect the premises at any reasonable time while work is proceeding therein.

2. If the Employer is not a registered pharmacist, or does not undertake personally the practical course of study of the Pupil, he shall appoint some registered pharmacist member of his staff who shall be responsible to the Employer therefor.

3. The practical course of study which the Pupil must undergo shall include :—

(1) experience in—

- (a) the manipulation of pharmaceutical apparatus in common use ;
- (b) the recognition, by sensory characters, of the chief crude drugs and chemical substances used in medicine ;
- (c) the preparation of galenicals illustrating the principles involved in the commoner pharmaceutical operations ;
- (d) the reading, translation and copying of prescriptions, including the checking of doses ;

- (e) the dispensing of prescriptions illustrating the commoner methods of administering medicaments ;
  - (f) the storage of drugs and medicinal preparations.
- (2) a knowledge of the keeping of the records required by the various Acts of Parliament affecting pharmaceutical practice.
4. The Pupil shall keep a record of his work.

5. The Employer shall provide such opportunity, accommodation, apparatus, materials and books of reference as shall be required to enable the Pupil to undergo the practical course of study prescribed in Regulation 3.

6. The number of pupils that may be employed in any shop shall not exceed two where there is one registered pharmacist engaged in the work in which the Pupil is undergoing the aforesaid course, and where there is more than one registered pharmacist similarly engaged, the number shall not exceed one for each additional such registered pharmacist, provided that where an employer has in his employment on 1st June, 1946, a number of apprentices in excess of that specified such excess number of apprentices may be allowed to complete their apprenticeship with such employer.

7. For the purpose of Regulation 6, the description " pupil " shall mean and intend any person, other than a bona fide medical student, undergoing a practical course of study, including the compounding and dispensing of medicines whether or not for one of the qualifications of the Society and whether or not under an apprenticeship agreement.

8. In the event of any question arising as to the interpretation or observance of these regulations the decision of the Council shall be final.

## P o i s o n s

REGULATIONS, DATED 8TH MAY, 1946, MADE BY THE MINISTER OF HOME AFFAIRS UNDER SECTIONS 30 AND 32 OF THE MEDICINES, PHARMACY AND POISONS ACT (NORTHERN IRELAND), 1945.

1946. No. 59

### ARRANGEMENT OF REGULATIONS

#### *Application and Relaxation of Part III of the Act*

1. Restriction of sales by shopkeepers.
2. Exemption of animal medicines.
3. Extension of labelling provisions and relaxation with respect to poisons in the Second Schedule and consignments to Great Britain.
4. Limitation of section 27 (2) to certain substances.
5. Extension of section 27 (2) to sales wholesale, etc., and relaxation of the said subsection.
6. Relaxation of section 28 (3) in the case of certain medicines.
7. General exemption of section 28 transactions.
8. Exemption from the provisions relating solely to the First Schedule.
9. Complete exemption for articles and substances in the Third Schedule.