

L.N. 72 of 1970

TIN ACT 1962
(1962 No. 25)

Tin (Production and Export Control) Order 1970

Commencement : 3rd September 1970

WHEREAS by the Tin (Production and Export Control) Order 1968 the period during which the control of tin and tin ore was to be effective commenced on 20th September 1968 and was to expire on a date to be notified by further order under the Tin Act 1962 not earlier than 31st December 1968;

AND WHEREAS pursuant to an international agreement that period expired on 31st December 1969 :

NOW THEREFORE, in exercise of the powers conferred upon me by section 1 (1) of the Tin Act 1962 and of all other powers enabling me in that behalf, I, Russel Aliyu Barau Dikko, Federal Commissioner for Mines and Power, hereby make the following order :—

1. The period of control during which section 1 of the Tin Act 1962 (which authorises control of production and export of tin and tin ore in certain circumstances) became effective commenced from 20th September 1968 as notified by the Tin (Production and Export Control) Order 1968 and expired on 31st December 1969.

Expiration of control period of production etc. of tin and tin ore.

2. This Order may be cited as the Tin (Production and Export Control) Order 1970 and shall have effect throughout the Federation.

Citation and extent.

MADE at Lagos this 3rd day of September 1970.

R. A. B. DIKKO,
Federal Commissioner for Mines and Power

EXPLANATORY NOTE

(This note is not part of the above Order but is intended to explain its effect)

This Order gives effect to the decision of the International Tin Council that production and export control of tin be lifted with effect from 1st January 1970.

L.N. 73 of 1970

MEDICAL AND DENTAL PRACTITIONERS ACT 1963
(1963 No. 9)

MEDICAL AND DENTAL PRACTITIONERS DECREE 1969
(1969 No. 44)

**Nigeria Medical Council (Postgraduate Examinations)
Regulations 1970**

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L.N. 73 of 1970

MEDICAL AND DENTAL PRACTITIONERS ACT 1963
(1963 No. 9)

MEDICAL AND DENTAL PRACTITIONERS DECREE 1969
(1969 No. 44)

Nigeria Medical Council (Postgraduate Examinations)
Regulations 1970

Pursuant to section 7A (7) of the Medical and Dental Practitioners Act 1963 (as inserted by the Medical and Dental Practitioners Decree 1969) the Nigeria Medical Council hereby makes the following regulations, which may be cited as the "Nigeria Medical Council (Postgraduate Examinations) Regulations 1970".

PART I.—GENERAL REGULATIONS FOR POSTGRADUATE EXAMINATIONS
CONDUCTED BY THE COUNCIL

1.—INTRODUCTION

1. The postgraduate diplomas in specialised branches of medicine and dental surgery to which a candidate may proceed under these regulations are the following fellowships :—

F.M.C.

1. Anaesthesia
2. Cardiovascular Surgery
3. Dental Surgery
4. Ear, Nose and Throat
5. General Practice
6. Medicine (Physic)
7. Neurology
8. Neurosurgery
9. Obstetrics and Gynaecology
10. Ophthalmology
11. Paediatrics
12. Pathology
13. Psychiatry
14. Public Health
15. Radiology
16. Surgery.

2.—TRAINING PROGRAMME

2. The training programme of each Board of Examiners shall last a minimum period of five years beginning at such time after the pre-registration training as the Board may approve. The said period of five years shall, therefore, exclude the pre-registration year. The first year of the five years training shall be spent in a general hospital, rural or health centre, and shall not necessarily relate to the specialty of the particular Board but shall, as far as possible, cover work of a general nature. Candidates in obstetrics and gynaecology or surgery are, however, required by the appropriate Board to spend the first year of the training programme in a programme especially directed by that Board. The course in Neurosurgery shall however last a minimum period of six years.

3. After the first year, there shall follow a period of two years leading to the Part I Examination. Accordingly, the Part I examination shall not be taken until the expiration of three years after pre-registration. The Part II (Final) Examination shall be taken after a programme of at least two years after passing the Part I Examination. (See the curriculum of each Board).

4. Candidates in each group of specialty shall take Part I Examination of the same standard. Modifications in the courses and the examinations shall be made for the specialty in each group. For this purpose, the groupings shall be as follows :—

GROUP I

Medicine
Paediatrics
Haematology
Psychiatry
Neurology

GROUP II

Public Health
General Practice

GROUP III

Anaesthesia

GROUP IV

Radiology

GROUP V

Surgery including Neurosurgery
Cardiovascular Surgery
Ophthalmology
Ear, Nose and Throat (hereinafter referred to as E.N.T.)

GROUP VI

Pathology

GROUP VII

Dental Surgery

GROUP VIII

Obstetrics and Gynaecology.

5. The training in the various specialties leading to the diploma shall be done within established posts in various hospitals and institutions recognised for this purpose. Where a Board considers that facilities in Nigeria are inadequate in any respect, it may direct candidates to go overseas for that part of the training. It is to be emphasised to candidates that the training programme shall be regarded by Council and the Boards of Examiners as of greater importance than the examinations.

3.—BASIC SCIENCE COURSE

6. Before a candidate shall present himself for the Part I Examination, he must have completed a basic science course or a corresponding course in a specialty such as Public Health. The basic science course shall be taken at a University Teaching Centre and shall be a six months intensive course in the basic sciences and shall cover the curriculum set out below, that is—

(a) The first six to eight weeks shall be devoted to an introductory course which will cover basic Pathology, Bio-Chemistry, Anatomy, Physiology and Micro Biology. This course will be taken by all candidates sitting for the Examinations of any Board.

(b) The remaining period of the six months shall be devoted to details and specific aspects of those subjects in their relation to each specialty and will vary from specialty to specialty.

7. At the end of the six months course, there will be an examination consisting of two papers. One paper will be on the basic subjects. The second paper will be on specific subjects and the questions will be related to each particular specialty. As an alternative, the basic science course may be spread out over the period of two years for those who are undergoing their training in a University Teaching Centre. Council will regard the training of the candidates as of greater importance than the passing of the examination itself.

8. For this course, each University Teaching Centre will be allowed to make variations to suit its structure and staff but a common examination will be taken by all candidates.

Candidates who have had additional training or experience in the basic science subjects, e.g. holders of B.Sc. degree in basic sciences or demonstrators in basic sciences may be exempted from the relevant part or parts of the basic sciences course.

4.—EXAMINATIONS

PART I EXAMINATION

9. Part I Examination shall be taken not less than four years after the basic qualification. It shall be at least of the same standard as qualifications at present (1970) recognised for Senior Registrar and Special Grade Posts in hospitals and other institutions in Nigeria. In appointing the external examiners mentioned in section 7A of the Medical Practitioners Act 1963 regard shall be had to the foregoing provisions of this paragraph.

10. Before a candidate shall be allowed to present himself for the Part I Examination, he must satisfy the Registrar that he has undergone the Basic Science course and has been successful at the examination.

PART II EXAMINATION

11. Part II Examination shall be taken after a programme of training of not less than two years after a candidate has been successful in Part I Examination (see the curriculum of each Board).

5.—DISSERTATION

12. To ensure that candidates are familiar with the proper use of the library and know where to look for facts when necessary, a dissertation shall be required of every candidate that presents himself for the Fellowship Examination. As an alternative, a candidate may make a presentation of a case-book in which cases in his particular specialty are described in detail together with comments on the existing literature. It is emphasized that the case-book or dissertation should not be such as to force the candidate into spending an unnecessarily long period on research in a narrow subject. An oral examination may be conducted when judged necessary.

13. A successful candidate in the Part II (Final) Examination will be qualified for direct appointment (wherever a vacancy occurs) as a Consultant in his specialty.

PART II.—REGULATIONS FOR POSTGRADUATE EXAMINATION OF EACH BOARD

6.—INTERNAL MEDICINE

14. Emphasis should be placed on clinical medicine based on a sound training in the scientific basis of medicine.

PART I EXAMINATION

15. After the compulsory year of general clinical training (*see* under General Regulations above), the next two years shall be spent in a hospital recognised by the Board. The training shall be common to all specialties in the internal medicine group with minor modifications to suit each sub-specialty.

Subjects for the Part I Examination shall include :—

(a) Bio-Chemistry and Physiology, Anatomy in relation to Internal Medicine, and Pharmacology—2 papers.

(b) Pathology, Parasitology and Microbiology—2 papers. There shall be no practicals but *one* oral examination which will be conducted with equal time allocated to subjects in (a) and (b) respectively.

(c) Written papers in General Medicine and Therapeutics.

(d) Clinical and oral examination.

PART II EXAMINATION

16. In the last two years there shall be further clinical training in either general medicine or a sub-specialty such as Neurology, Psychiatry and other sub-specialties as Council may, from time to time, decide.

17. In order that a hospital may be recognized for the purpose of a training leading to the examination for the Fellowship, the hospital must have at least two consultants in the particular specialty and it must be fully staffed to carry out routine clinical investigations and must have adequate laboratory and radiological facilities. In order to encourage development of training centres in all states, the Board will recognise positions within each State Health Service on the basis of the number of specialists available in the whole State.

18. All candidates shall be required to submit a dissertation or a case-book which will reveal an independent ability for research and investigations.

19. The examinations in Haematology will be conducted jointly by the Boards of Examiners in Medicine and Pathology.

7.—PAEDIATRICS

20. Paediatrics shall be considered as a specialty in its own right and shall not be regarded as a sub-specialty of medicine.

21. After full registration, a candidate must have done at least five years clinical and scientific work. The training leading to Part I Examination shall last for two years apart from the compulsory year of general clinical training (*see* under Regulation 2 of General Regulations). The said two years training shall include a six months course in the basic sciences ; and the training may be taken in conjunction with candidates preparing for other Board Fellowship Examinations but with modifications to suit Paediatrics.

22. A candidate must have been employed as resident in a hospital for a period of at least one year, of which six months must be in General Medicine.

23. After the Part I Examination a candidate shall spend at least two years in clinical Paediatrics in any approved or recognized institutions, after which he can present himself for the Part II (Final) Examination.

24. At the final examinations a candidate shall present a dissertation on a clinical or research programme or alternatively a case-book in which cases in his particular specialty are described in detail together with comments on the existing literature. It is emphasized that the case-book or dissertation should not be such as to force the candidate into spending an unnecessarily long period on research in a narrow subject.

25. The whole training shall be comprehensive and shall cover clinical Paediatrics, Preventive Paediatrics, Child-Health, Social Paediatrics, all backed up by training in clinical laboratory methods.

26. Emphasis shall be placed on the care of the sick child in well equipped as well as in ill-equipped environment where facilities may be limited to bed-side training and clinical judgement.

27. The candidate should concern himself with the total environment of the child and its relation to the structure and organisation of the community as can be learnt from such institutions as well-baby clinics, community development projects, school health programmes as well as the preventive services. He should be capable of advising and executing programmes in immunisation and health education. He should pay attention to the effect of social customs, traditions and taboos on the child.

8.—SURGERY

28. It is emphasized that the aim of the professional specialist qualifications in Surgery is not to reproduce the University Postgraduate programme in Surgery, but to ensure a proficient training toward a specialist status in Surgery in Nigeria.

29. The Fellowship of the Medical Council in Surgery shall be a diploma awarded in General Surgery or a particular branch of Surgery for which the candidate has been successful in an examination which is at the end of a period of systematic training. The field of specialisation shall be specifically expressed on the diploma.

PART I EXAMINATION

30. There shall be five years hospital training after the pre-registration year. The first three years shall be a preliminary clinical training in the general principles of Surgery. Apart from the 6 months course in Basic Sciences, the remaining 2½ years should be apportioned as follows:—

18 months : Clinical General Surgery including paediatrics Surgery ;

3 months : Emergency (Casualty) ;

3 months : Trauma and Orthopaedics ;

— 3 months : E.N.T. and Eyes ;

3 months : Neurological Thoracic Surgery.

Examination Structure of Part I of F.M.C.S.

(a) 4 Papers of 3 hours each—

(i) General Principles of Surgery.

(ii) Applied Anatomy.

(iii) Applied Physiology and Bio-chemistry.

(iv) General Principles of Pathology.

(b) Clinical Examination in Surgery.

(c) Oral and Practical Examinations in Anatomy and Physiology.

COURSE IN BASIC SCIENCE

(See under Regulation 3 of General Regulations above).

PART II EXAMINATION

31. The second phase of the programme in Surgery shall consist of specialization in a particular branch of Surgery. The training period shall be for a period of not less than two years and shall consist of specific programme requirements to be outlined for the particular subject or specialty (for example, General Surgery, Ophthalmology, Neurological Surgery). At the end of this period there shall be a final examination, Part II Examination.

Final Examination in General Surgery

(i) 2 written papers of 3 hours each.

(ii) Clinical Examination.

(iii) Oral Examination.

DISSERTATION

32. A dissertation or presentation of a case-book in which cases in the particular field are described in detail with comments on existing literature shall be required of each candidate.

The aim of the Fellowship Diploma is to emphasize adequate surgical training of a high standard which will ensure unquestionable professional competence.

9.—PATHOLOGY

PART I EXAMINATION

33. There shall be a general training in Pathology leading to a Part I Examination which is expected to give the candidate a broad basic training in Pathology. In the Part II Examination, the candidate shall specialize in one of the following branches:—

Clinical Pathology ;

Chemical Pathology ;

Morbid Anatomy ;

Micro-biology and Parasitology ;

Haematology ;

Forensic Pathology.

34. By Clinical Pathology (for the purpose of this Diploma) is meant "Morbid Anatomy, Micro-biology, Parasitology, Haematology and Chemical Pathology".

35. The total training period shall be five years after the pre-registration year (*see under General*)

PART II EXAMINATION

36. This shall consist of two years course of training in laboratories approved by the Board. Candidates may choose to be examined in one of the specialties of Pathology listed above.

37. A dissertation or presentation of a case-book shall be required of each candidate.

38. The Part I and Part II Examinations in Haematology will be conducted jointly by the Boards of Examiners in Medicine and Pathology—*See paragraph 19 above.*

10.—PUBLIC HEALTH

39. There shall be a course of five years after the pre-registration year (*see* under General). This should be taken in an institution or in employment at recognised posts in approved or recognised institutions with training facilities.

40. A list of approved institutions and training posts will be published by the Council from time to time. The Council will arrange periodic inspection of approved or recognised institutions to ensure maintenance of standards.

PART I EXAMINATION

41. The course leading to the Part I Examination shall extend over a period of two years after the compulsory year of general clinical training. Part of that course will be the Basic Sciences Course which will correspond to the Basic Courses of the other Fellowship Examinations.

Part I Examination will include :

- (a) Anatomy in relation to Internal Medicine and Pharmacology,
Physiology and Biochemistry Two Papers,
- (b) Pathology and Microbiology Two Papers,
Orals but no clinical
- (c) General Medicine and Therapeutics
One Paper
Clinical
Orals.

PART II EXAMINATION

42. The Part II Examination should follow the Part I Examination after at least two years of training in Public Health.

43. The previous recommendation of the Board that Public Health should be recognised as a specialty during the pre-registration year and that the Council should recognise six months approved practice in Public Health in lieu of Medicine for full registration is strongly urged.

CRITERIA FOR RECOGNITION OF INSTITUTIONS

44. An institution for training in the specialty leading to the post-graduate fellowship in public health must satisfy the criteria set out below :—

STAFF : At least one consultant in Public Health to supervise the candidate's work.

The institution must have an organisation which deals with one or more community health problems.

The candidate must, during the period of training, spend at least six months working on a community health project in a rural setting. A report of this project will be presented at the Part II Examination. His training should include the following—

Planning, organisation and Administration of Community Health, Health Services and all other items listed under the curriculum for the Fellowship examination in Public Health.

QUALIFICATIONS

45. Before being allowed for the examination, a candidate must produce proof of at least two years work in approved posts and extensive experience of work in the field of Community Health after the Part I Examination.

46. The Part II Examination will consist of :—

- (a) Three Written Papers—one in each of the following :—
 - (i) Statistics, Epidemiology and Community Health Organisation.
 - (ii) Environmental and Occupational Health.
 - (iii) Social Medicine.
- (b) One Clinical and Practical in Communicable diseases and common public health problems.
- (c) One Oral examination.

47. Reports to be presented by a candidate before the Part II examination shall include :—

- (a) Report on a community health project conducted by the candidate.
- (b) Day book which will record his visits and practical work during his training.
- (c) Dissertation on a subject of his own choice.

COURT OF EXAMINERS

48. The court of examiners should consist of Consultants in Community Health; from this court, examiners for each examination for the Fellowship shall be chosen.

For the Part II Fellowship Examination, an external examiner with experience of community health problems common to Nigeria should be chosen.

RECOGNITION OF THE DIPLOMA IN PUBLIC HEALTH

49. Five years from the commencement of these examinations, the DPH or MPH should no longer be recognised as adequate qualification for consultants in Community Health.

50. The Board recommends that all practising specialists and consultants in Community Health should be FOUNDATION Fellows of the Council.

11.—PSYCHIATRY

51. There shall be a period of training for five years after the full registration before a candidate may present himself for the final examination in Psychiatry. The five years should be divided into one year of general clinical training (*see* under General), two years preceding the Part I Examination and the last two years, which shall precede the Part II Examination.

PART I EXAMINATION

52. The course of training for the Part I Examination will include instruction in General Basic Sciences (anatomy, physiology and statistics). Courses in these subjects should concentrate on their relevance to neurology and psychiatry being the preparation and basis for—

(a) the neurological basic sciences (neuroanatomy, neurophysiology including electrophysiology and EEG, neuropathology) and

(b) basic sciences essential for psychiatry (medical psychology, medical sociology, genetics and epidemiology).

53. These subjects will be taught during the first two years of the training and in a way that a candidate will be able to take them on a part-time basis whilst holding clinical appointments.

54. The first year of training should be spent in medicine. The second year will be evenly divided between neurology and psychiatry. During the clinical appointment in neurology the subjects in the neurological sciences will be taught. In psychiatry the trainee should acquire basic knowledge in this specialty. He should, under supervision treat patients on an in-patient and out-patient basis and take part in seminars, regular ward rounds and case conferences.

55. Part I Examination shall consist of:—

Written Papers

Clinicals

Orals

Practical in Neurology

PART II EXAMINATION

56. The course of training for the Part II Examination shall last two years and will comprise the different subjects of clinical and social psychiatry (psycho-pathology, psychodynamics, psychotherapy, physical therapy, including psychopharmacology, extra-mural care, etc.). Part of these subjects will be taught in form of lectures and seminars. Emphasis will be laid on supervised clinical experience. At least two years must be spent in clinical appointments in recognized psychiatric institutions. At least six months should be spent in an institution caring for the chronically ill and another six months at an institution where extra-mural care is emphasized.

57. Part II Examination shall consist of written papers, clinicals, orals, and practicals in the different sectors of clinical and social psychiatry. The candidate should further submit either a dissertation supervised by a recognized teacher on a subject approved by the Board or a collection of published papers by the candidate which will be considered to assess the candidate's training in research techniques or a record of ten cases in psychiatry covering different aspects, two at least each in organic psychosis, functional psychosis and psychogenic conditions. These cases should have been personally managed by the candidate and he should comment on his form of management and treatment and discuss relevant literature.

INSTITUTIONS APPROVED FOR THE TRAINING IN PARTS I AND II EXAMINATIONS

58. The courses listed for the Part I Examination in the three groups of Basic Sciences will have to be held in a university centre. The clinical appointments during the training for the Part I Examination as well as for Part II Examination will have to be in hospitals where adequate supervisions are granted. For every five candidates in training at least one consultant in psychiatry should be available.

12.—NEUROLOGY

PROGRAMME OF TRAINING IN NEUROLOGY

59. After the compulsory one year period (*see* under General) the course leading to specialisation in Neurology should be as follows :—

PART I EXAMINATION

(a) Six months Basic Sciences,

Two months—Applied—

Anatomy, Physiology,
Pharmacology,
Pathology and

Four months—Specialty.

(b) One year in General Medicine and Basic Sciences.

(c) Six months in the Basic Neurology Sciences and allied subjects, namely—

Neuro-Anatomy, Neuro-Physiology, Neuro-Pharmacology, Psychology (including Statistics) and Neuro-pathology.

PART II EXAMINATION

60. The course of training which shall last for a period of two years will comprise :—

(a) Clinical Neurology,

(b) Neuro-Pathology, Clinical Neuro-Physiology with special reference to Electro-diagnosis, Electro-myography and Electro-encephalography,

(c) Neuro-radiology, and

(d) Clinical Psychiatry (covering not less than three months).

APPROVED INSTITUTIONS FOR PART I EXAMINATION IN NEUROLOGY

61. The Part I Examination in Neurology is to be taken in a University Teaching Centre and in hospitals where adequate supervision is guaranteed. For every five candidates in training at least one consultant in Neurology should be available.

APPROVED INSTITUTIONS FOR PART II EXAMINATION IN NEUROLOGY

62. For a Hospital to be approved for training in this course it must have—

(i) at least ONE Consultant Physician in Neurology ; and

(ii) Facilities for Neurological investigations.

63. Students for Part I Neurology must have completed one year in Pre-registration and one year in General Medicine and Basic Sciences.

EXAMINATIONS FOR THE FELLOWSHIP DIPLOMA IN NEUROLOGY

64. The examinations will be conducted in two parts, namely Part I Neurology and Part II Neurology.

65. The examinations for Part I Neurology will be taken on completion of the Part I Neurology course. No candidate shall proceed to Part II Neurology course without having satisfied the examiners in the Part I Neurology examinations.

66. Part II (Neurology) examinations will be taken on the completion of Part II (Neurology) course.

COURT OF EXAMINERS

67. The Court of Examiners shall be made up as follows—

(a) External examiners drawn not necessarily from outside Africa, and

(b) Members of the Board of Examiners in Psychiatry and Neurology, in rotation.

MODE OF EXAMINATIONS

68. Examination for Part I (Neurology) will consist of :—

(i) Two 3-HOUR written paper on Basic Neurological sciences (sections I and II).

(ii) Written papers in General Medicine and Therapeutics.

(iii) Oral examinations.

(iv) Practical examination wherever necessary.

69. A high standard of general medicine is expected of candidates. Candidates must pass in the written papers (sections I and II) at the same sitting to obtain a pass in Part I (Neurology) examination. No limit shall be imposed as to the number of times a candidate may sit these examinations.

70. Examinations for Part II (Neurology) will consist of :

(i) Two 3-HOUR written papers.

(ii) Clinical Examinations—a long case and a number of "short cases".

(iii) Oral examinations, comprising a pathology viva and Final viva.

71. All the sections of the Part II (Neurology) Examination must be passed at the same sitting.

72. The examinations in Part I, including papers in General and Clinical Medicine, to bring them in line with the other Boards.

13.—OBSTETRICS AND GYNAECOLOGY

73. There shall be a period of training for the Fellowship in Obstetrics and Gynaecology of five years, after pre-registration year. This shall be divided into Part I lasting 2½ years and Part II covering the last 2½ years. (see under General).

PART I.—COURSE

74. Training leading to the Part I Examination shall be spent in organised courses in the Basic Sciences with a special bias for Obstetrics and Gynaecology, and General Surgery including Urology.

75. The subjects of this part shall include Anatomy, Physiology, Pathology including Haematology, Pharmacology, Endocrinology, Preventive Medicine, Neonatal Paediatrics, "Tropical Medicine", General Surgery including Urology, Paediatrics and Gynaecology.

76. This period of 30 months is divided up as follows :—

- (a) Basic Sciences (6 months),
- (b) General Surgery including Urology (6 months),
- (c) Obstetrics and Gynaecology (6 months),
- (d) General clinical Training (12 months).

The minimum requirement shall be—

- (i) Full medical registration
- (ii) Six months of residence in General Surgery in an approved institution
- (iii) Six months of residence in Obstetrics and Gynaecology
- (iv) The Basic sciences course almost identical with that already outlined for the Fellowship in Surgery and may be taken either as a full-time intensive course or spread over the whole period of 30 months.

PART I EXAMINATION

77. At the end of the Part I course there shall be an examination comprising of THREE (3) written papers grouped as follows :—

PAPER I

Anatomy
Physiology
Pathology and Bacteriology
Pharmacology

PAPER II

Endocrinology
Preventive Medicine
Tropical Medicine

PAPER III

Neo-natal Paediatrics
General Surgery including Urology
Obstetrics and Gynaecology.

78. The three written papers will be followed by ONE ORAL and a clinical examination in obstetrics and gynaecology.

PART II EXAMINATION

79. The detail of the programme of training in Part II Examination is as follows :—

REQUIREMENTS FOR PART II OF THE POST-GRADUATE TRAINING IN
OBSTETRICS AND GYNAECOLOGY

80. Part II of the Post-graduate training will cover specialisation in Obstetrics and Gynaecology.

81. This phase shall last 2½ years, 6 months of which shall be spent in a recognised institution overseas. The training overseas is to enable a candidate to have further experience in the specialty especially in the management of genital cancer.

82. The specialty of Obstetrics and Gynaecology is an essentially practical one and greater emphasis should be laid on ensuring the availability of adequate facilities for a good all round practical training. The aim is to train specialists with a broad knowledge of Obstetrics and Gynaecology and related disciplines.

83. Practical post-graduate training should be carried out under close supervision by experienced and competent specialists in Institutions with facilities for radiological and laboratory investigations and with either a good library of their own or with easy access to a good library (see section on the Recognition of Training Hospitals).

84. The trainee should go through a period of rotating internships in obstetrics and gynaecology lasting at least six months each. No period of training at an institution of less than six months duration shall count towards recognition. During this period evidence must be shown of progressive responsibility by the trainee.

85. There shall be evidence of regular attendance at least once weekly at Ante-natal, Post-natal and Gynaecological Clinics. The trainee should also be familiar with Infant Welfare Work.

86. During at least six months of this training the candidate should have experience on a Ward for the intensive care of neo-nates under the supervision of a Paediatrician.

87. Throughout the training, instructions shall be given in Clinical Obstetrics and Gynaecology and in Obstetrics and Gynaecological Pathology.

88. The Council shall arrange periodic inspections of recognised institutions to ensure the maintenance of standards.

89. At the end of the training period the trainee shall be required to present for the acceptance of the Board, a record of 15 cases each in Obstetrics and Gynaecology personally managed by him with comments on his form of management as opposed to other forms of treatment. The record should include one long commentary each in Obstetrics and Gynaecology of about 2,000 words in a subject of the candidates choice.

90. Evidence of completion of the stipulated period and attendance should be attested to by the supervising Consultant/Consultants on an official proforma. (*Vide Appendix*)

FINAL EXAMINATION :

91. On the satisfactory completion of the period of training the trainee shall be required to sit a final examination consisting of :

- (1) Two written papers of three hours each in Obstetrics and Gynaecology which shall include a question in General Surgery.
- (2) Clinical Examination including identification of Histological slides.
- (3) Oral Examination.

RECOGNITION OF HOSPITALS FOR TRAINING

92. The various hospitals for training in the specialty leading to the post-graduate diploma in obstetrics and gynaecology must satisfy the following criteria :—

MINIMAL HOSPITAL REQUIREMENTS FOR RECOGNITION AS A TRAINING HOSPITAL FOR THE FELLOWSHIP

93. An institution for training in specialty leading to the post-graduate fellowship in obstetrics and gynaecology must satisfy the criteria set out below :—

(1) The hospital must have at least 50 obstetric beds for a maximum of 2 (two) Trainees out of which there must be at least 10 ante-natal beds and five beds for septic cases. There must be a well equipped theatre and staff capable of dealing with all obstetric complications. There should also be 10 neo-natal beds under the supervision of a qualified Paediatrician.

ANCILLARY HOSPITAL SERVICE

(2) The following ancillary hospital services are essential to an obstetric unit—

- (a) A Pathology Laboratory and a Blood bank with a Specialist Pathologist and Haematologist available.
- (b) An X-Ray Department under the control of a qualified Radiologist.
- (c) A Records Department under the care of a qualified Records Officer.
- (d) A good Hospital Library with a good supply of Journals and Periodicals especially in Obstetrics and Gynaecology.

(3) There must also be 25 gynaecological beds and operating facilities to enable at least 2 operating sessions weekly.

MEDICAL AND NURSING STAFF

MEDICAL

(4) In addition to the trainee, there must be at least one or two consultants in Obstetrics and Gynaecology and no fewer than two other doctors in the department. The trainee should be preferably resident or should reside within a reasonable distance from the hospital.

NURSING

(5) There should be enough members of the nursing staff to allow a reasonably high standard of obstetric practice.

INSPECTION OF TRAINING HOSPITALS

94. There shall be a periodic inspection of the training hospitals by two Consultants to ensure the maintenance of standards.

CERTIFICATE OF SATISFACTORY TRAINING

95. All prospective candidates for the Fellowship diploma must possess a certificate of satisfactory training before they can proceed to the examination (a proforma is attached). A candidate who has been signed up as "unsatisfactory" may appeal to the Board if he so desires.

TIME LIMIT FOR THE RECOGNITION OF THE M.R.C.O.G. EXAMINATION

96. Five years from the date of the commencement of the Fellowship award is the time limit for the recognition of the M.R.C.O.G. Examination; after this period any holder of the M.R.C.O.G. or similar recognised diploma must do an additional 2 years in Nigeria before proceeding to take the Part II of the Fellowship Examination.

COURT OF EXAMINERS

97. The composition of the Court of Examiners should be as follows:—

A pool of Examiners of Consultants in Obstetrics and Gynaecology; examiners for a particular examination should be chosen from this pool.

NUMBER OF EXAMINATIONS

98. In each year there shall be two examinations for the Fellowship in Obstetrics and Gynaecology.

APPENDIX

99. This is to certify that Dr.....has worked in the Obstetric and Gynaecological Department of this hospital from.....to.....during which he carried out his clinical duties to the satisfaction of the Supervising staff. In addition he attended regularly at the various clinics and took an active part in the care of patients.

Signed.....
Supervising Consultant

Qualification.....

Date

Place

14.—ANAESTHESIA

100. The aim of the professional specialist qualifications in Anaesthesia is not to reproduce the University Postgraduate programme in Anaesthesia, but to ensure a proficient training toward a specialist status in Anaesthesia in Nigeria.

101. The specialist qualification shall be a diploma, F.M.C.A. (Fellow of the Medical Council—Anaesthesia) awarded in Anaesthesia.

102. There shall be five years hospital training after Pre-registration year. Emphasis shall be placed on clinical medicine and Anaesthesia based on sound training in the scientific basis of medicine. Training is as important as the examination itself. During the four years of training a candidate should be trained to have experience in all specialties of Anaesthesia.

103. The first two years of training shall lead to the Part I Examination (*see* under General). The training in the basic Medical Sciences shall spread over the two years. During this period, courses will be offered concurrently in Basic Sciences: I (Anatomy, Physiology, Pharmacology, Physics and Pathology). An examination (Part I) shall be conducted at the end of this preliminary training during which the trainee is evaluated on the subjects above with emphasis on the application of these sciences to Anaesthesia.

PART I EXAMINATION

104. The Part I Examination shall consist of:
- (a) Paper I — Anatomy, Physics and Pathology.
 - (b) Paper II — Physiology and Pharmacology.
 - (c) Two Orals.

PART II EXAMINATION

105. The second phase of the programme in Anaesthesia shall consist of a further period of two years clinical work which must include 6 months spent in General Medicine and 18 months in the specialty of Anaesthesia.

106. The final examination (Part II) shall be taken at the end of this second training, and will encompass the field outlined above. The Part II Examination will consist of:

- (a) a written examination,
- (b) two orals and
- (c) a clinical examination.

107. The written examination will consist of two papers.
Paper I — The principles and practice of Anaesthesia.
Paper II — will consist of:

The principles and practice of Medicine and Surgery—with emphasis on their application to Anaesthesia.

There will be one clinical followed by two orals.

15.—RADIOLOGY

108. The Course leading to the F.M.C.R. shall cover a period of four years. Candidates must be :

- (a) Fully registered medical practitioners in Nigeria ;
- (b) After full registration, candidates must have had one year clinical training in Medicine, Surgery and Obstetrics and Gynaecology in a recognised hospital.

109. The examination shall be in two parts, and at the final examination a candidate shall present a dissertation on a clinical programme.

PART I—CLINICAL AND PROFESSIONAL

110. The course shall cover a period of eighteen months ; the first six months will be spent on the basic sciences, and the remaining twelve months on :—

- (a) *Radiologic Physics and Medical Photography*
- (b) *Principles of Radiological Anatomy*
- (c) *Principles of Physiology and Pathology*
- (d) *Basic Radiodiagnostic and Radiotherapeutic techniques, e.g. Barium Meal and Enemas.*

111. The course in Radiologic Physics and Medical Photography shall cover—

Elementary Magnetism and Electrostatics ; Electricity ; Simple theory of Electromagnetism ; Ohm's Laws ; Moving Coil instruments ; Ammeters ; Voltmeters ; Atomic Structure ; Bohr's Theory and Optical Spectra ; Planck's Theory and wave Mechanics ; Quantum Theory ; Thermionic Emission ; Electronic Valves-Diodes ; Triodes ; Rectification ; Amplification ; Origin and Theory of X-rays ; X-ray Tubes ; Tube Rating ; High Voltage Generators and Circuits ; Transformers ; Measurement of High Voltages ; Cathode Ray Oscillographs ; Photoelectric Emission.

Absorption and Scatter of X-rays ; Phenomena of Classical, Photo-electric Absorption ; Compton Effect ; Pair Production ; Measurement and quality of X-rays.

Radioactivity ; Isotopes ; a, b, Gamma-Rays ; Exponential Law ; Inverse Square Law ; Radiation Hazards and Protection methods.

Structure of X-ray films ; Photographic Theory of Interaction of X-rays with silver halide emulsion ; Exposures ; Density ; Contrast ; Magnification and Distortion ; Grids ; Intensifying Screens ; Fluorescence ; Fluoroscopy ; Tomography ; Storoography Image Intensifiers and Television.

PART I EXAMINATION

112. The Part I Examination shall consist of :

- (a) Three papers :—
 - (i) Radiologic Physics
 - (ii) Basic Sciences
 - (iii) Radiodiagnostic and Therapeutic Techniques.
- (b) Practical Physics.
- (c) Oral.

PART II EXAMINATION

113. The remaining thirty months shall be spent on clinical radiology in the Radiological Department with tutorials in the clinical disciplines. Candidates will be required to keep a case note of a minimum number of special radiological procedures that they have carried out in the departments.

114. Candidates will also be required to present a dissertation on a clinical programme. The examination shall consist of :—

(A) Paper

- (i) Clinical Radiology—Paper I
- (ii) Clinical Radiology—Paper II
- (iii) Internal Medicine
- (iv) Surgery, Obstetrics and Gynaecology
- (v) Pathology—Section A : Radiotherapy
Section B : Radiodiagnosis

(B) Practical Examination—

Report on radiographs
Clinical Cases in Radiotherapy

- (C) Viva—1. Radiology.
2. Clinical Subjects.

CRITERIA FOR RECOGNITION OF HOSPITALS FOR TRAINING IN RADIOLOGY

115. An institution for training in the specialty leading to the postgraduate fellowship in radiology must satisfy the criteria set out below.

The institution shall have at least :—

- (a) Two Consultant Radiologists
- (b) Two Consultant Physicians.
- (c) Two Consultant Pathologists
- (d) Two Consultant Surgeons
- (e) Two Consultant Obstetricians and Gynaecologists
- (f) The minimum number of cases undertaken by the institution shall not be less than 10,000, and for Radiotherapy 1,000 new cases per annum.

116. These criteria are subject to review every three years or as the occasion may demand.

117. The following Hospitals are hereby recognised for the full training :—

- (1) Lagos University Teaching Hospital
- (2) University College Hospital, Ibadan.

118. Associated Hospitals in which candidates may spend not more than nine months during their training are—

- (1) General Hospital, Lagos.
- (2) Adeoyo Hospital, Ibadan.
- (3) General Hospital, Benin.
- (4) General Hospital, Enugu.

PART III.—CURRICULUM FOR POSTGRADUATE EXAMINATIONS
OF THE NIGERIA MEDICAL COUNCIL

(A) PART I EXAMINATIONS: BASIC SCIENCE COURSE

16.—ANATOMY AS RELATED TO SURGERY

Topographical Anatomy of the Human Body (Applied Anatomy)

The Anatomy of the Head and Neck :

- The structure of the scalp.
- The Development of the Cranium.
- The Neuro-cranium and its contents and the surface anatomy.
- The meninges, the venous sinuses and the middle meningeal artery.
- Spinal cord and its contents.
- The Anatomy of the circulation of cerebrospinal fluid.
- The anatomy of the anterior and lateral regions of the neck.
- The development and malformation of the thyroid, thymus, parathyroids and tonsils.

Neuro-anatomy :

- The development and congenital malformations of the face, nose and mouth.
- The gross anatomy of the mouth, buccal cavity, tonsillar region and pharynx.
- The viscerocranium.

Thorax :

- The anatomy of the thoracic wall with particular consideration of the mammary gland.
- The thoracic cavity and its contents.

Abdomen :

The anatomy of the abdominal wall—the umbilical and the postero-lateral and the inguino-abdominal regions.

- The development, gross anatomy and microscopic structure of the abdominal viscera.

Pelvis and Perineum :

- The development, gross anatomy and microscopical structure of the pelvic viscera and the perineum.
- Malformations of the external genitalia.

The Extremities and Joints :

- Osteology.
- The gross anatomy and cutaneous innervation of the upper and lower extremities.
- The development, classification and description of joints of the body.

Histology and Histochemistry :

- Correlative Normal and Pathological Anatomy.
- The microscopical structure of normal tissues.
- Principles of Histochemistry.
- An outline of the distribution of common metabolites and enzymes in normal tissues.
- Electron Microscopy.
- Autoradiography.

Practical Work :

- Histology of normal tissues.
- Special histological techniques.
- Histochemistry of carbohydrates, proteins (immuno-histochemistry) fats.
- Enzymo Histochemistry.
- Autoradiography.
- Electron Microscopy.

NIGERIA MEDICAL COUNCIL

17.—ANATOMY AS RELATED TO MEDICINE

The Anatomy of the Head and Neck :

- Development of the cranium.
- The Neuro-cranium, its contents and surface anatomy.
- The meninges.
- The anatomy of the circulation of the cerebrospinal fluid.
- The anatomy and development of the tonsils, thyroid and parathyroid.
- The anatomy of the salivary glands.

Lymphatic system of the head and neck,
The cranial nerves, their central origins, intra cranial courses and relations and their peripheral distribution.

Aetiology of malformations of the face, nose and mouth.

Neuro-anatomy :

The anatomy of the brain.

The blood supply of the brain.

The neuroglia.

The meninges.

The brain stem and spinal cord.

Neuroembryology including the study of the derivatives of the neural crest.

Anatomy of the autonomic nervous system.

Thorax :

The anatomy of the thoracic wall.

Development of the heart and its great vessels.

Congenital malformations of the heart and its great vessels.

The anatomy of the bronchial tree and the lungs.

Lymphatic drainage of the lungs with special reference to the relations of lymph glands.

The innervation of the heart and the lungs.

The development of the thymus and its gross anatomy.

Surface anatomy of the lungs, the heart and its great vessels.

Abdomen :

The development of gastro intestinal tract with particular reference to the origins of such derivatives as the pancreas, liver, gall bladder.

The anatomy of the abdominal viscera.

Development and malformations of the kidney and the ureters.

Development of the adrenals.

Pelvis and Perineum :

The development, gross anatomy and microscopical structure of the pelvic viscera and the perineum.

The Extremities and Joints :

Osteology.

Cutaneous innervation of the limbs.

Blood supply of the limbs.

Functional Embryology and Growth Studies :

Functional differentiation of the liver, kidney and endocrine systems.

Correlation of enzymes with hormones in development.

Genetic and embryological basis of inborn errors of metabolism.

Studies of growth and differentiation—of cells, of parts of the body.

Maturation of bones in relation to child growth and development.

Functional differentiation of the gastro intestinal tract.

Histology and Histochemistry :

Correlation of normal and morbid micro-anatomy of tissues of the body.

Principles of Histochemistry.

An outline of the distribution of common metabolites and enzymes in normal and abnormal tissues and cells.

Electron Microscopy.

Autoradiography.

Immunohistochemistry.

Practical Work :

Histological techniques.

Histochemistry of carbohydrates, proteins and fats.

Enzymes Histochemistry.

Immunohistochemistry.

Autoradiography.

Electron Microscopy.

18.—PHYSIOLOGY—GENERAL (All Specialties)

A. Review of General Physiological Principles :

1. Structural Basis of Living Matter :

(i) Biological molecules.

(ii) Biological integration :

(a) The living cell : functional changes and their mechanisms.

(b) The structure and function of nucleoproteins and the integration of the cells as a unit of living matter.

(iii) Ultrastructure in biology and medicine.

(iv) External structures—The skin, collagen.

2. Energetics of living System :

- (i) Thermodynamics of the living organism and its potential energy status.
- (ii) O_2 —consumption of the living cell.
- (iii) Mechanisms of energy transformation.
- (iv) Heat production and heat loss. (Basal metabolism, specific dynamic action. Regulation of body temperature).

B. Integrated course in Physiology—Biochemistry and Chemical Pathology :

1. Regulation of Body Water, Electrolytes and Acid-base Balance. General Considerations :

- (1) Distribution of water and electrolytes in extra-and intracellular spaces of the body.
- (2) *Biological Transport of Water and Solutes.*—(Combined with Biochemistry) :
 - (i) Permeability of cell membrane.
 - (ii) Osmosis.
 - (iii) Permeability of plasma membrane.
 - (iv) Diffusion and carrier-mediated diffusion.
 - (v) Active transport of solutes.
 - (vi) Gibbs-Donnan equilibria and the permeability of capillaries.
 - (vii) Ionic equilibria—bio-electric potentials in nerves, muscles, etc.
 - (viii) Correlation of Bio-electric potentials with characteristics of excitable tissues.
 - (ix) Absorption and secretion.
 - (x) The cerebro-spinal fluid : Composition in meningitis, convulsive states, etc. Tests.
 - (xi) Secretion of acid by the stomach.
- (3) *Water and Electrolytes Balance :*
 - (i) Causes and effects of oedema and dehydration.
 - (ii) Potassium metabolism. Clinical manifestations of hypo-and hyper-kalaemia. Effects of starvation and malnutrition or potassium exchange.
 - (iii) Sodium and chloride metabolism in health and disease especially in renal diseases.
- (4) *Acid-base Balance :*
 - (i) pH of body fluids and buffer systems of the body.
 - (ii) Respiratory acidosis and alkalosis.
 - (iii) Metabolic acidosis and alkalosis.
 - (iv) Pathophysiology and chemical pathology of diabetes, uraemia and gastrointestinal disturbances.

2. Carbohydrates : Metabolism.

- (i) Digestion and absorption of carbohydrates.
- (ii) Storage and conversion.
- (iii) Role of liver and muscle in carbohydrate metabolism.
- (iv) Glycogen storage diseases.
- (v) Blood sugars : glucose tolerance test ; decreased and increased responses (e.g. hyperthyroidism, pregnancy, hyperinsulinism, hypothyroidism, diabetes mellitus and experimental diabetes mellitus).
- (vi) Endocrine and related influences in carbohydrate metabolism (e.g. glucagon ; anterior pituitary hormones, thyroid, insulin).
- (vii) 1. Renal excretion of glucose ; glycosuria ; other sugars in urine.
2. Abnormal urine sugars ; (galactosemia, lactosuria, etc.).
- (viii) Ethylalcohol ; alcoholism.

3. Lipids : Metabolism.

- (i) Digestion, absorption and transport of Lipids ; Lipoproteins.
- (ii) 1. The Liver and lipid metabolism.
2. Cholesterol.
- (iii) Plasma proteins
- (iv) Deposition and storage of lipids : fatty liver.
- (v) Endocrines and lipid metabolism, e.g. insulin ; thyroid hormone, etc.
- (vi) Ketosis ; Ketone bodies in blood and urine.
- (vii) Diabetes mellitus : clinical biochemical manifestations ; diabetic coma ; use of insulin.
- (viii) Fats in faeces and urine ; steatorrhoea malabsorption syndromes.
- (ix) Abnormalities of plasma lipids and lipoproteins.

4. Proteins : Metabolism.

- (i) Digestion, absorption and utilization.
- (ii) Protein Nutrition ; turnover.
- (iii) Amino acids }
 - in body fluids.
 - in the blood.
 - in the urine.
- (iv) Inborn (inherited) errors of metabolism, e.g. cystinuria : the Fanconi Syndrome ; alkaptonuria, phenyl Ketonuria, etc.

- (v) Nitrogenous constituents of the blood—
 - (vi) 1. Plasma Proteins :
2. Non protein nitrogen ; urea, uric acid, creatinine, amino acids, ammonia.
3. Nitrogen excretion.
 - (vii) Abnormal urinary nitrogen.
 - (viii) Endocrines and protein metabolism, e.g. growth hormone ; insulin ; thyroid.
5. *Nucleic Acid Metabolism* :
- (i) Biological significance of nucleic acid.
 - (ii) 1. Nucleic acids : role in mutation and carcinogenesis.
2. Nucleic acids ; role in protein synthesis.
 - (iii) Coenzymes.
 - (iv) Digestion and absorption of nucleic acids.
 - (v) Purines and Pyrimidines.
 - (vi) Gout.
 - (vii) RNA : DNA : *Rudiments* of molecular Biology.
6. *Principles of nutrition and dietetics : FAO Standards*
- C. *Pathological Physiology of Systems* :
1. The Cardiovascular System :
- (i) *Haemodynamics* :
(a) *Review of Basic Principles* : Derivation of POISEUILLE'S Law and consideration of variations in the parameters involved in Pressure—flow relationships, e.g. effect of changes in elasticity and diameter of blood vessels and viscosity of blood in relation to blood pressure and velocity of blood flow.
(b) *Blood Pressure* : (1) Arterial—its measurement and factors maintaining it. Arterial hypertension and hypotension. Syncope and shock.
(ii) Venous pressure and disturbances in venous circulation. The capillaries and lymphatics. Pulmonary circulation. Effect of pregnancy on the circulation.
 - (ii) Dynamics of Cardiac circulation and cardiac muscle physiology.
Cardiac pain.
 - (iii) Cardiac output and its estimation in man. Hypertrophy and dilatation of the Heart. Valvular diseases. Congenital defects including diagnostic techniques, e.g. cardiac catheterization and O_2 —content estimation. Pericardial disease.
 - (iv) The electrocardiogram—genesis, physiology, patho-physiology and analysis including the Vector-cardiogram.
 - (v) Cardiac failure and function tests.
 - (vi) Correlation and clinical interpretation of the patho-physiology of cardiovascular diseases and their symptoms.
2. *The Respiratory System* :
- (i) Pulmonary ventilation and respiration.
Tests of Respiratory function.
Control of respiration.
Control of pulmonary circulation.
The regulation of acid-base balance by the respiratory system.
Abnormal breathing.
Pulmonary function in disease.
 - (ii) Protective mechanism of the lungs.
Pleural disease.
3. *The Renal System* :
- (i) Excretory functions of the kidney.
Tests of excretory function—Principles and value of determination of Renal glomerular filtration rate and renal blood flow.
Concentration and dilution tests—specific gravity.
Reabsorption mechanism and their evaluation—measurement of Tm.
 - (ii) Endocrine function—pressor and antipressor ; Erythropoietin.
 - (iii) Clinical manifestations of Renal diseases and their interpretation.
 - (iv) Functional patterns in Renal disease. Renal failure : Uraemia.
4. *The Digestive System* :
- (i) Oesophagus : Mechanism of pain.
Functional disorders and organic diseases of oesophagus.
 - (ii) *Stomach* : Sensori-motor and secretory disorders.
Mechanism of pain ; Peptic ulceration—pathogenesis symptomatology and diagnostic procedures.
 - (iii) Small intestine : Correlation of symptomatology and pathophysiology of small intestinal disease.
Malabsorption syndrome, vomiting.
 - (iv) *Large intestine* : Physiological correlation of signs and symptoms of large intestine disease—constipation, diarrhoea. Ulcerative colitis, amoebiasis. Diverticulosis, etc.
 - (v) Gall—Bladder and Pancreas.
5. *Haemopoietic and Reticulo-Endothelial Systems* : Disorders of blood. Hypersplenic clinical syndrome.
6. *Locomotor System* : Physiology of Joints ; Effects of trauma and chronic inflammations of joints, etc. The skeletal muscle and disorders of the neuro-muscular junction. Bone.

7. *The Nervous System*: The motor system. The pyramidal and extra-pyramidal systems. The sensory system. The vestibular system. Cerebellum. Special senses. Autonomic nervous systems. Vascular disorders of the central-nervous system. Consciousness and higher integrative functions. The EEG.

8. *Endocrine Glands*: General considerations and resume of glandular physiology. Dynamic physiology of the Hormones. Pathophysiology of endocrine dysfunctions. Endocrine therapy.

9. Patho-physiology of pain.

D. *Integrated Patho-physiology, Bio-chemistry and Chemical Pathology of Systems*:

1. *Liver*

Changes in hepatic structure and function in disease, e.g. fatty liver, hepatitis, cirrhosis. Disorders of hepatic blood flow. Pain due to liver disease. Serum enzymes and ions. Metabolic functions of the liver; Pathological principles.

(i) Blood pigments—jaundice.

(ii) Carbohydrates.

(iii) Fats.

(iv) Proteins

(v) Hormones.

(vi) Vitamins.

(vii) Detoxication.

Liver function tests based on its metabolic functions

Selected tests; differential diagnosis

Effects of hepatic disease on other organs:

(a) Hepatic coma

(b) Oedema, ascites

(c) Liver failure.

2. In general the courses in Pathophysiology, Biochemistry and Chemical Pathology of systems will be arranged so as to follow each other in appropriate sequence.

BOOKS RECOMMENDED

1. *The Physiological basis of Medical Practice*: Best and Taylor.

2. *Clinical Physiology*: Campbell, Dickinson and Slaters.

3. *Clinical Physiology*: Grollman.

4. *Pathologic Physiology*: Sodeman.

5. *Signs and Symptoms*: Mc Bryde.

6. *Applied Physiology*: Samson Wright.

7. *Text book of General Physiology*: Dawson.

E. *Practical Experiments*:

1. *Water and Electrolyte Balance*:

(1) Estimation of plasma and cell concentrations in:

(a) Dehydrated patients.

(b) Anaemic patients.

(c) Polycythaemic patients.

(ii) Estimation of N^+ and K^+ in plasma and cells of patients suffering from dehydration, oedema and ascites, and uraemic patients as a basis for therapy in the above cases.

2. *Cardiovascular System*:

(i) Cardiac electrophysiology in various disorders of the heart. (clinical).

(ii) The physiological basis of cardiac symptomatology—Angina pectoris, Heart sounds and their interpretation.

Pulse rate and wave. (clinical).

The physiological significance of cardiac arrhythmias.

(iii) *Cardiac catheterization in man.*

3. *Respiratory System*:

(i) Lung volume and mechanics.

(ii) Gas analysis.

(iii) Respiratory regulation in the cat.

4. *Renal*:

Urine formation in patients with cardiovascular and renal disease. (clinical).

Renal regulation of Acid-base balance. (clinical).

Urine analysis in health and disease. (clinical).

5. *Gastro-intestinal tract*:

Propulsive activity of the digestive tract.

Effect of vagal stimulation on gastric and intestinal mobility.

Vagal stimulation and histamine on gastric secretion.

Insulin and gastric secretion.

6. *Metabolism*:

B.M.R. in man.

¹³¹I in determining Thyroid function.

7. *Endocrinology. (clinical)*:

Studies and tests in patients presented during the course.

8. *C.N.S. (clinical)*:

Clinical examination of C.N.S. and special senses.

E.E.G.

19.—BIOCHEMISTRY

(ALL SPECIALTIES)

1. General Introduction : Surgery : Biochemistry and Medicine.
2. Review of Basic Biochemistry :
 - (a) Carbohydrate Metabolism : Pathways.
 - (b) Lipid Metabolism : Pathways.
 - (c) Protein and nucleic acid metabolism : Pathways.
 - (d) Metabolic interrelationships of Lipids, carbohydrates and proteins.
 - (e) Metabolism of sterols and steroids.
 - (f) Enzymes in Clinical Medicine.
 - (g) Acid-Base Chemistry : Electrolytes.
 - (h) Detoxication ; antimetabolites in medicine.
3. Enzymes :
 - (a) Digestive Enzymes { serum amylase and other serum enzymes.
serum lipase.
 - (b) Transaminases.
 - (c) Lipases : pancreatic function and diseases.
 - (d) Enzymes of carbohydrate metabolism.
 - (e) Phosphatases { alkaline.
acid.
 - (f) Cerebrospinal fluid enzymes.
 - (g) Enzymes and drug action.
 - (h) Significance of laboratory tests.
4. The Kidneys : Renal Function :
 - (a) Characteristics of normal urine : constituents and significance of values.
 - (b) Renal insufficiency : Biochemical manifestations.
 - (c) Non protein nitrogenous constituents of blood (done in section 5).
 - (d) Renal Function Tests.
 - (e) Uremia : Chemical alterations and specific renal functions in uremia.
5. Chemical investigation of gastric and pancreatic secretion :
 - (a) Gastric secretion ; measurement of gastric acidity.
 - (b) Gastric secretion in disease ; duodenal ulcer.
 - (c) Pernicious Anemia.
 - (d) Pancreatic secretion : pancreatic diseases : malabsorption syndromes and laboratory tests, biochemical abnormalities.
6. Biochemistry of Pregnancy :
(see also section II—Steroid Metabolism and Endocrinology).
7. Radioisotopes in Medicine :

General Principles and application :

Physiology of the thyroid glands

Experiments with ^{131}I ;

Application to malignant growth ;

Study of intermediary metabolism.
8. Biochemical Genetics in relation to Medicine :
 - (a) Rudiments of Biochemical genetics : general principles.
 - (b) Metabolism of haemoglobin and porphyrins.
 - (c) Sickle cell anaemia : population Biology.
 - (d) Other abnormal haemoglobins.
 - (e) Haemophilia : clotting of blood : other haemorrhagic diseases and conditions, and related factors, e.g. Vitamin K.
9. Mineral Metabolism :
 - (a₁) Metabolism of Iron : folic acid ; vitamin B12 requirements.
 - (a₂) The anemias : iron deficiency (abnormal iron metabolism).
 - (b₁) Calcium and Inorganic Phosphate Metabolism.
Requirements.
 - (b₂) Absorption ; concentration in serum ; blood calcium and PO₄.
 - (b₃) Bone minerals : bone formation.
 - (b₄) Abnormal serum calcium and abnormal urine calcium (increased and decreased values).
 - (b₅) Rickets : osteoporosis : vitamin D.
 - (b₆) Phosphatases.
 - (c) Magnesium metabolism : absorption and excretion ; clinical disturbances in magnesium metabolism.
 - (d) Sulfur metabolism.
 - (e) Iodine metabolism : absorption : secretion : abnormal iodine metabolism.
 - (f) Trace elements, e.g. copper, cobalt, fluorine : (Industrial and occupational health).

10. *Endocrines and Steroid Metabolism* :

- (a) General Introduction.
 (b) (1) Non steroid hormones.
 (2) Hormones of the adrenal Medulla : The Thyroid Hormones of the pituitary.
 (c) Chemistry of the Steroid Hormones (of Biochemistry of pregnancy) ; Estrogens : progesterone : androgens : 17-ketosteroids ; adrenocortical hormones, etc.
 (d) Methods of assay of Hormones : significance of values ; abnormalities.

11. *Vitamins* :

- (a) General Introduction. Nutrition.
 (b) Vitamin A.
 (c) Vitamin B complex.
 (d) Vitamin C.
 (e) Vitamin D and vitamin K.
 (f) *Biochemical* assay of vitamins.

BOOKS RECOMMENDED

1. Principals of Biochemistry by White, Handler, Smith.
2. Clinical Biochemistry by Cantarow and Trumper.
3. The Biochemistry of Clinical Medicine by W. S. Hoffman.

PRACTICAL BIOCHEMISTRY

(This will be worked out to dovetail with and complement work in Clinical (Chemical) Pathology)

- (i) Review of general methods in Chemical Pathology e.g., Liver function tests and others.
 (ii) Determination of Enzymes : significance.
 (iii) *Studies in Intermediary Metabolism* :
 (a) Carbohydrate metabolism : glucose tolerance test and BMR Blood sugars.
 (b) Protein Metabolism.
 (c) Lipid Metabolism.
 (iv) Electrolyte Studies.
 (v) Hormone and Vitamin Assays.
 (vi) Mineral Metabolism.
 (vii) *Special Areas* :
 (A) e.g. application of radioisotopes, e.g. use of I^{131} in exps.
 (viii) (A) Electrophoresis.
 (B) and Chromatography.
 sugars and proteins and amino acids : general principles and applications (routine and special).
 (ix) Special projects/investigations, e.g.
 (a) Studies of various values in Kwashiokor : biochemical consequences of protein malnutrition.
 (b) Studies in diabetes mellitus : Ketosis, etc. ; insulin tolerance.
 (c) Studies in Biochemistry of pregnancy Ketosteroids levels : serum proteins.
 (d) Urinary amino acids in various conditions.
 (e) Dehydration or electrolytes in children.

20.—SUGGESTED TIME-TABLE FOR BASIC SCIENCES COURSE—TO BE MODIFIED BY EACH INSTITUTION—TERMS I, II AND III: 10 WEEKS/TERM

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 - 9	Anatomy Lecture	Biochemistry Lecture	Biochemistry Lecture	Physiology Lecture	Anatomy Lecture	Seminars on various topics
9 - 10	Pharmacology Lecture	Physiology Lecture	Anatomy Lecture	Microbiology Lecture	Microbiology Lecture	
10 -	Pharmacology Practical	Physiology Practical	Pathology Practical	Biochemistry Practical	Microbiology Practical	Clinico- Pathological Conferences
2 - 6	C	L I	N	I C	S	

LECTURES (HOURS)

Physiology ..	60
Biochemistry ..	60
Anatomy ..	60
Microbiology ..	60
Pharmacology ..	30

PRACTICALS

4/term ..	12—3-hour periods
6/term ..	18—3-hour periods

Term=10 weeks

**21.—SUGGESTED TIME-TABLE FOR BASIC SCIENCES COURSE—TO BE
MODIFIED BY EACH INSTITUTION—TERMS I, II AND III: 10 WEEKS/TERM**

<i>Time</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
8 - 9	Pathology Lecture	Biochemistry Lecture	Biochemistry Lecture	Physiology Lecture	Chemical Pathology Lecture	Seminars on various topics
9 - 10	Pharmacology Lecture	Physiology Lecture	Pathology Lecture	Microbiology Lecture	Microbiology Lecture	
10 - 1	Pharmacology Practical	Physiology Practical	Pathology Practical	Biochemistry Practical	Microbiology Practical	Clinico- Pathological Conferences
2 - 6	C	L I	N	I C	S	

LECTURES (HOURS)

Physiology ..	60
Biochemistry ..	60
Pathology ..	60
Chemical Pathology ..	30
Microbiology ..	60
Pharmacology ..	30

PRACTICALS

4/term ..	12—3-hour periods
6/term ..	18—3-hour periods

22.—PHARMACOLOGY (All Specialties)

In each section, undergraduate work would be reviewed briefly. Attention will be paid in particular to where drug treatment had changed in the recent past. Recent advances will be discussed. Emphasis will be placed on clinical pharmacology so as to bring out clearly the pharmacological basis of therapeutics.

I. General Principles in Pharmacology :

1. Route of administration, Absorption, Distribution Metabolism, and Excretion of Drugs.
2. Mechanisms of Drug Action.
3. The Dose-Effect Relationship, Biological variation, Selectivity, Biological Assay.
4. Factors Modifying Drug Effects :
Age, Sex, Body-weight, Route of administration, Time of administration, Rate of inactivation, Excretion, Tolerance, Physiological variables, Pathological State, Environmental factors, Genetic factors, Drug interaction.
5. Drug Toxicity :
Drug allergy, hypersensitivity and idiosyncrasy.
Blood Dyscrasias ; Hepatotoxicity ;
Nephrotoxicity ; Teratogenic (Embryopathic) effects.
Behavioural toxicity ; Drug Dependence and Drug addiction.
Drug poisoning ; Iatrogenic disease ; Drug safety committee.
General Principles of Treatment of Drug Toxicity.
6. Development, Evaluation and Control of Drugs :
Sources and Discovery of New Drugs, Development and Evaluation of New Drugs, Ethics of Clinical Trials.
Drug Regulations.

II. Central Nervous System :**(A) 1. General Anaesthetics :**

General Principles, Recent Advances.

Special Precautions in Medical Conditions requiring general Anaesthesia, e.g., Diabetics, Hypertensive Patients, Cardiac Patients, Patients in renal failure, Neurological and Psychiatric Patients. Any others.

2. Analgesic Drugs :

Morphine and opiate drugs.

Drug addiction and abuse.

Antipyretic analgesics.

Salicylate Poisoning.

A review of recent developments.

3. *Local Anaesthetics*.—A brief review, especially of recent advances.

(B) 1. *Alcohol alcoholism*.

2. *Hypnotics and Sedatives*.

Barbiturates.

Non-barbiturate Hypnotics.

Poisoning by Hypnotic Drugs.

3. Drug Treatment of Epilepsy.

(C) Centrally acting muscle relaxants and *Anti-Parkinsonian Drugs*.

(D) *Drugs used in Psychiatry—Psychotropic Drugs*.

1. General CNS Stimulants.

2. Antidepressives or Antidepressants.

Monoamine Oxidase Inhibitors(MAOI).

Non-MAOI Antidepressives.

3. Psychotomimetics or Hallucinogens.

4. Tranquillizers : Reserpine, Phenothiazines,
Medium and Minor Tranquillizers ;
Tranquillo-sedatives.

(E) Medullary Stimulants.

(F) A review of current trends in Neuropharmacology.

III. *Autonomic Nervous System*.

1. *Autonomic Innervation of Important Organs :*

The Eye ; Salivary Glands ; Heart ; Trachea lungs ;

Liver ; Spleen ; Stomach. Small Bowel and Proximal Colon ;

Distal Colon ; Rectum ; Adrenal Medulla ; Kidneys and Ureters ;

Urinary Bladder ; Blood Vessels ; Hair-Follicles, Sweat Glands and Lower Limbs.

2. *Choline and Anticholine Drugs :*

Sites of action and actions of Acetyl Choline and Choline Drugs.

Acetylcholine and Choline Esters

Cholinergic Alkaloids

Anticholinesterases.

Anticholine Drugs : Belladonna Alkaloids.

Other Anticholinergic Drugs.

3. *Sympathomimetics and Adrenergic Blocking Drugs :*

Sites and mode of action of Adrenergic Drugs

Action of Adrenergic Drugs

Adrenaline, Non-adrenaline and Isoprenaline

Ephedrine, Amphetamine

Anorexigenic Drugs ; Nasal Decongestants

Drug Treatment of Hypotensive states

Adrenergic Blocking Drugs reviewed briefly.

IV. *Cardiovascular System*

1. *Cardiac Glycosides Digitalis, Digoxin*

Toxicity especially in severe congestive heart failure and the elderly. Interaction with Diuretics.

Drug treatment of Congestive Heart Failure.

2. *Antiarrhythmic Drugs : Quinidine, Procainamide*

3. *Anti-hypertensive Drugs and Treatment of Hypertension :*

Ganglion Blockers

Guanethidine

Methyldopa

Thiazide Diuretics

Hydrallazine

Veratrum Alkaloids

Monoamide Oxidase Inhibitors

Rauwolfia Alkaloids.

4. *Vasodilator Drugs :*

The Nitrites

Drug Treatment of Angina Pectoris.

5. *Drugs used in the Prevention and Treatment of Atherosclerosis :*

Nicotinic Acid

D-Thyroxine

Ethyl Chlorophenoxyisobutyrate.

V. Respiratory System :

1. Drug Treatment of Bronchial Asthma
 - Aminophylline
 - Isoprenaline
 - Sedatives.
2. Cough Depressants and Expectorants
 - Codein and other Opiate Drugs
3. Respiratory Stimulants and Depressants
4. Tobacco smoking, habituation and association with Bronchial Carcinoma.

*VI. Urinary System**(A) Diuretics*

1. *Drug reducing the active Reabsorption of Sodium in the Renal Tubules*
 - Organic Mercurials
 - Denzothiadiazides (Thiazides) and related Drugs—Frusemide
 - Ethacrynic Acid
 - Triamterene
 - Carbonic Anhydrase Inhibitors
 - Acid forming Salts.
2. *Aldosterone Antagonists*
 - Spironolactone
3. *Osmotic Diuretics*
 - Urea
 - Mannitol.

(B) Other Drugs used in the Treatment of Oedema

1. Xanthines
2. Digoxin
3. Cation-exchange Resins
4. (Pyrimidines and Triazines).

(C) The Clinical Use of Diuretics

1. The Pathological Physiology of Oedema and Relationship to Drug Action
2. Cardiac Oedema
3. Renal Oedema.
4. Ascites.
5. Choice of Diuretics ; combination of Diuretics and adjuvants.
6. Complications of diuretic Therapy and Refractory Oedema.

(D) Alteration of Urinary pH.

- To : Increase efficiency.
 Increase solubility.
 Increase excretion.
 Discourage Growth of Organisms.
 Reduce irritation.
 Tromethamine buffer for treatment of Acidosis.

VII. Skeletal Muscle :

- Neuromuscular Blocking Agents.
- Competitive blocking drugs.
- Depolarizing Drugs.

VIII. Alimentary System :

1. Purgatives and Laxatives (Cathartics) Dangers and abuse or Cathartics.
2. Gastrointestinal sedatives.
3. Gastric antacids Gastrointestinal demulcents.
4. Drug treatment of Peptic Ulcer :
 - Anti-spasmodics.
 - Antacids and demulcents.
 - Drugs promoting healing of peptic ulcer.
5. Assessment of Drug treatment of :
 - Malabsorption syndrome.
 - Ulcerative colitis.
 - Haemorrhoids.

XIV. Chemotherapy and Antibiotics :

1. General considerations.
2. Sulphonamides.
3. Penicillins.
4. Alternatives to Penicillin.
5. Streptomycin and related Drugs.
6. The tetracyclines.
7. Chloramphenicol.
8. Other antibiotics including Fungicides.
9. Chemotherapy of Tuberculosis and Leprosy.

10. Chemotherapy of parasitic diseases.
 (a) Helminthiasis—Ascaris, Hook-worm, Tapeworm, Pin-worm and miscellaneous.
 (b) Malaria.
 (c) Amoebiasis.
 (d) Schistosomiasis.
 (e) Filariasis.
 (f) Miscellaneous protozoal infections.

IX. Reproductive System :

1. Androgenic Hormones.
Testosterone.
2. Oestrogens and Progestagens.
3. Oral Contraceptives.
4. Oxytocics-Oxytocin-Ergot.

X. Endocrinology :

A. Pituitary :

1. Anterior Pituitary.
Growth Hormone.
Gonadotrophin.
Corticotrophin.
Thyroid stimulating Hormone.
2. Posterior Pituitary.
Oxytocin (as above).
Vasopressin.

B. Thyroid and anti-thyroid drugs.

C. Parathyroid Hormone and vitamin D.

D. Insulin and the oral hypoglycaemic agents.

1. Effects of insulin ; indications ; preparations ;
2. Unwanted Effects : Hypoglycaemia ; insulin resistance ; Hormones tending to raise the blood sugar ;
3. The oral hypoglycaemic drugs.
4. Treatment of diabetes mellitus.
Factors other than drugs.
Choice between insulin and oral antidiabetics.
Factors affecting control of diabetics.
Diabetic ketosis.
Surgery in diabetic patients.

XI. Blood and Blood forming organs :

The Vitamins

A. Anaemia : Drug Treatment of

1. Iron Deficiency Anaemia.
2. Other Hypochromic anaemias.
3. Sickle cell anaemia.
4. Megaloblastic Anaemia, folic acid and vitamin B12.

B. Other Vitamins.

C. Anticoagulants—Heparin.

—Dicoumarol.

Treatment of Thombo-embolic conditions.

D. Fibrinolytic Enzymes and Fibrinolytic Inhibitors.

Fibrinolytic enzyme system.

Epsilon Aminocaproic Acid.

Trasylo.

Streptokinase and Urokinase.

XII. The Autocoids.

1. Histamine and antihistamines.
2. 5-hydroxytryptamine and antagonists.
3. Angiotensin and the Kinins.

XIII. Smooth Muscle :

Spasmolytics and Spasmodics.

XIV. Chemotherapy of Neoplastic Diseases :

1. Cytotoxic drugs.
2. Hormones.
3. Radioactive Isotopes.

Practical demonstration classes will be arranged as necessary.

Practical application of therapeutic agents will be demonstrated in the wards.

BOOKS RECOMMENDED

The Pharmacological Basis of Therapeutics by L. S. Goodman and A. Gilman.
 Clinical Pharmacology by D. R. Lawrence.

REFERENCES

Recent Advances in Pharmacology.
 Annual Review of Pharmacology.
 British Medical Journal : Today's Drugs.

23.—PATHOLOGY AND MICROBIOLOGY

Candidates shall be examined in Pathology to include Morbid Anatomy, Medical Microbiology, Chemical Pathology and Haematology. Candidates shall be expected to be familiar with the following topics :

Medical Microbiology : Routine diagnostic methods for identification of bacteria, parasites and viruses of medical importance, including serological methods, in biological fluids. Sensitivity tests for treatment and anti-chemotherapeutic control.

Principles of sterilization and disinfection.

Principles of immunology.

Common parasitic and fungal diseases in the tropics

Haematology : Anaemias, leukemias, myelo-proliferative disorders, haemorrhagic and thrombo-embolic diseases, haemoglobinopathies.

Chemical Pathology : Basic principles of fluid and electrolyte balance, blood chemistry, hepatic function tests, renal function tests, principles and practice of urinalysis.

Morbid Anatomy : General principles of pathology to include inflammation coagulation, thrombosis embolism, growth and its disorders, pigments and pigmentation, ionising radiation, chemical poisons and medical genetics. Regional pathology to include common diseases of the cardiovascular, respiratory, alimentary, endocrine, musculoskeletal and central nervous systems.

24.—OBSTETRICS AND GYNAECOLOGY

Candidates will not be examined on *minutiae*.

1. *Anatomy* :

Embryology as related to female and male genito-urinary system.

Anatomy of the bony pelvis.

Dissection of the female pelvis with particular reference to the anatomy of :

The uterus and its appendages including peritoneal reflection. Supports of the uterus.

The inguinal canal

The femoral canal

The perineum

The anal triangle

Urogenital triangle

Superficial perineal pouch

Deep perineal pouch

The bladder, ureters, etc.

The anatomy of the female breast.

Blood supply of the pelvis. Pelvic Lymphatics

Innervation of the pelvis.

Surface anatomy

Surgical anatomy

Applied anatomy

} of the pelvis

2. *Physiology* :

Physiology of reproduction including lactation

Physiology of the control of micturition

Body fluids

Electrolyte balance

Exchange of fluid between blood and tissue spaces—Lymph

Physiology of the kidneys : Secretion of urine

Kidney function in disease

Structure and functions of the ovary

Chemistry of steroids and ovarian hormones

Menstrual cycle

Relation of anterior pituitary to hypothalamus and ovary

The gonadotropins

Plasma proteins

Coagulation of Blood. Haemostasis

Iron metabolism

Folic acid metabolism

Regulation of the blood pressure

Autonomic control of the pelvic viscera

Foetal Physiology—Respiration, Circulation, etc.

The placenta—structure and functions. The hormones of the placenta.

3. Pharmacology of common drugs used in obstetrics and gynaecology, e.g.
 - Oxytocics
 - Diuretics
 - Hypotensive drugs
 - Steroids
 - Analgesics
 - Antiemetics, etc.

(But see generally Regulation 22—Pharmacology—all Specialties)

Endocrinology

Brief study of the endocrine organs :

- (a) Pituitary
- (b) Ovary
- (c) Adrenals
- (d) Thyroid
- (e) Hormones in obstetrics and gynaecology
- (f) The endocrine basis of intersexual conditions
- (g) Recent advances in endocrinology.

4. Elementary statistics and the use of seven figure tables and slide rule.
5. Pathology and Bacteriology
6. Preventive Medicine
7. Tropical Medicine
8. Neonatal Paediatrics
9. General surgery including urology
10. Obstetrics and Gynaecology.

25.—ANAESTHESIA

The changing pattern in the training of Specialist Anaesthetists makes it impossible to produce any rigid syllabus. However, in keeping with present universally accepted requirements, this programme is intended to serve only as guide lines.

The Basic Science Course will constitute—

- (a) Physiology.
- (b) Pharmacology.
- (c) Physics, the principles of clinical Measurement and the principles of clinical chemistry with special stress upon those general principles which concern anaesthetists.

PHYSIOLOGY :

Review of general physiological principles.

- (i) The cell.
- (ii) Body fluids.

WATER AND ELECTROLYTE BALANCE :

- (i) Regulation of water balance and composition of body fluids.
- (ii) Causes and effects of oedema and dehydration.
- (iii) Response to Anaesthesia and Surgery.
- (iv) Effects on body fluids of derangements of the Alimentary Canal.
- (v) Potassium Metabolism.
- (vi) Sodium and chloride metabolism.

ACID BASE BALANCE AND IMBALANCE :

- (i) pH of body fluids and buffer systems of the body.
- (ii) Respiratory acidosis and alkalosis.
- (iii) Metabolic acidosis and alkalosis.

MUSCLE AND THE NERVOUS SYSTEM :

- (i) Skeletal Muscle.
- (ii) Structure and Function of Nervous tissue.
- (iii) The Brain.
- (iv) The Nerve and Conduction.
- (v) Reflexes and the spinal cord.
- (vi) Sensation and its pathways.
- (vii) Special Senses and the Cranial Nerves.
- (viii) The Motor pathways. The Synapse.
- (ix) Maintenance of posture and balance.
- (x) Co-ordination of movement.

THE AUTONOMIC NERVOUS SYSTEM :

The Adrenal medulla.

THE CARDIOVASCULAR SYSTEM :

Structure and Properties of Heart Muscle.

Origin and Spread of Cardiac impulse.

The Electrocardiogram.

Cardiac Output and its estimation in man.

Heart Rate.

Hypertrophy and dilatation of the heart.

Valvular diseases. Pericardial disease.

Diagnostic techniques, e.g. Cardiac catheterization and O_2 content estimation.

Cardiac Failure and function tests.

SYSTEMIC CIRCULATION :

Blood Pressure

Arterial—its measurement and factors maintaining it.

Hypertension and Hypotension.

The Heart and Anaemia.

Syncope and Shock.

The Capillaries.

Venous Pressure and disturbances in venous circulation.

Tissue perfusion in health and disease.

SPECIAL CIRCULATIONS :

Coronary.

Cerebral.

Pulmonary.

Hepatic.

Renal.

THE BLOOD :

Blood, lymph and C.S.F.

Erythropoiesis and its regulation.

Blood elements.

Coagulation and coagulation defects.

Metabolism of Iron and Haemoglobin.

Plasma proteins.

Reticulo Endothelial System.

Immunity reactions.

The spleen.

THE RESPIRATORY SYSTEM :

The Control of respiration.

Pulmonary Ventilation and Respiration.

Transport of oxygen.

Carbon dioxide carriage.

Hypoxia.

Cyanosis.

Oxygen therapy and humidification of inspired air.

Abnormal breathing.

Respiratory Function Tests.

Regulation of Acid-base balance by the respiratory system.

Regulation of Body Temperature.

RENAL SYSTEM :

The kidney and homeostasis.

Renal function tests.

Uraemia.

Physiology of micturition..

DIGESTIVE SYSTEM :

Secretion of digestive juices.

Mechanics of the alimentary canal.

Swallowing.

Sphincters.

THE LIVER :

Changes in hepatic structure and function in disease.

Liver function Tests.

Detoxication.

Blood pigments—Jaundice.

METABOLISM :

Chemical transformation and Energy release.
 Carbohydrate Metabolism.
 Fat Metabolism.
 Protein Metabolism.

NUTRITION :

Principles of dietetics.
 Vitamins.

ENDOCRINE GLANDS :

General considerations
 Endocrine dysfunction and therapy.

As for the other specialities but with special emphasis on drugs directly related to Anaesthesia.

26.—PHARMACOLOGY**PHYSICS :**

- (a) Such physics as is necessary to an understanding of respiration and circulation ; the uptake and distribution of anaesthetics ; the movement of water and solutes across membranes.
 (b) The physical principles involved in the storage and utilization of compressed gases, in the vaporization of volatile substances, and in the use of high pressure oxygen.
 (c) The nature of explosions and the factors involved in their occurrence.

CLINICAL MEASUREMENT :

The principles. :

- (a) of the measurement of respiratory function, and of gas analysis (including gases in solution) ;
 (b) of the measurement of cardio-vascular function ;
 (c) of the measurement of temperature.

Candidates must have some knowledge of :

- (i) measurement and recording of biological electrical potentials, and
 (ii) the methods of statistical analysis used in medicine.

CLINICAL CHEMISTRY :

- (a) The principles of selection, application and interpretation of chemical laboratory investigations.
 (b) Disturbances of :
 (i) acid-base balance ;
 (ii) fluid and electrolyte balance ;
 (iii) renal function ;
 (iv) hepatic function ;
 (v) metabolism of carbohydrate, fat and protein.

27.—EAR, NOSE AND THROAT

The first part of the training should be devoted to basic sciences as applied to the specialty and the remaining period of the training to clinical aspects.

Basic Sciences :

Anatomy.—Lectures should cover,

- (i) The nose and paranasal sinuses.
 (ii) Temporal bone, Middle ear, antrum and Eustachean tubes, the internal ear.
 (iii) Nervous connections of the eight nerves.
 (iv) Pharynx.
 (v) Larynx.
 (vi) Trachea and oesophagus,
 (vii) General anatomy of the head, neck and thorax.

Facilities should be provided for dissection or inspection of dissected parts.

Physiology :

- (i) Physiology of hearing.
 (ii) Vestibular apparatus and equilibrium.
 (iii) Speech.
 (iv) Physiology of the nose and upper air passages.
 (v) Respiration.
 (vi) Pain.
 (vii) Smell.
 (viii) Taste.
 (ix) Salivary glands.
 (x) Deglutition.

Pharmacology and Therapeutics

The training after basic sciences besides clinical lectures should include lectures in pathology, bacteriology, radiology and other aspects of the specialities as well as allied and ancillary departments of medicine and surgery. They should be designed to form a theoretical basis in preparation for practical clinical training.

B. PART I.—EXAMINATIONS: CLINICAL AND PROFESSIONAL

28.—GENERAL SURGERY

The course of training leading to the Diploma of F.M.C.S. shall consist of two parts:—

- (1) Preliminary clinical training in General Principles of Surgery.
- (2) Specialist training in General Surgery.

General Principles of Surgery

Candidates are expected to undertake a three-year course in the Principles of General Surgery as well as in the Basic Sciences—Anatomy, Physiology, Biochemistry and Pharmacology-Therapeutics. A minimum period of 12 months should be spent in clinical surgery, and a minimum period of six months in the Basic Sciences.

A two-year clinical posting in surgery in an approved hospital will facilitate all the aspects of the candidate's training and at the same time ensure close co-operation between teachers in surgery and the basic sciences.

Contents of the Preliminary Clinical Training in General Surgery

(a) *In the wards*: A minimum of six months' clinical posting under a Consultant in an approved surgical unit: the candidate is expected to be fully resident.

(b) *In casualty*: A full-time appointment as Casualty Officer in an approved hospital extending over a minimum period of six months during which he is expected to work in the surgical emergency admission centre and in the minor operating theatre. To ensure facilities for adequate training, casualty departments, in order to qualify for recognition of the Nigeria Medical Council must be under the supervision of a full-time or part-time casualty surgeon.

(c) *Basic Sciences*: The course in basic sciences will be spread over the two-year period of preliminary training. This may be taken at the beginning or at the end of the surgical training. Alternatively, the candidate may take leave of the clinical departments at three-monthly intervals to concentrate on the basic sciences. Such programme would be carried out by mutual agreement between the departments of surgery and the basic sciences concerned. Under no circumstances shall the total period of study in the basic sciences be less than six months.

Examination

Part I: Part I of the examination for the F.M.C.S. (General Surgery) will be held at the end of the two-year course. Questions will be set in the Principles of General Surgery, including the Surgery of Trauma, and with special emphasis on Applied Anatomy, Applied Physiology and Morbid Anatomy. Two separate papers will also be set in the Basic Sciences. The examination will consist of:—

- (i) *Three written papers*.—one in the Principles of General Surgery and two in the Basic Sciences.
- (ii) Practical (clinical) examination in Surgery.
- (iii) Oral examinations in Anatomy and Physiology.

All subjects must be passed at one examination.

A successful candidate can then proceed to the next stage of his training for the Part II Examination.

29.—PAEDIATRICS

Recognition of the changing patterns of medical practice precludes the feasibility of a rigid schedule designed to provide complete training for paediatricians. This programme is designed to train a specialist Paediatrician.

- 1ST YEAR: Basic Science
1. Physiology
 2. Anatomy
 3. Paediatric Pathology and Laboratory Procedures
 4. Biochemistry
 5. Microbiology.

INTEGRATION

All these disciplines are studied in relation to Paediatric Practice and are taught by correlation with clinical rounds and conferences.

- 2ND YEAR:
1. Social Paediatrics
 2. Public Health
 3. School Health
 4. Preventive Paediatrics Accident Prevention Family Counselling
 5. The Normal Child
 6. Legislation and Public Administration in regard to the care of children
 7. Medical Statistics
 8. Medical Economics.

30.—MEDICINE

See Regulations for Postgraduate Examination in Medicine

31.—NEUROLOGY

See Regulations for Postgraduate Examination in Neurology

32.—PSYCHIATRY

See Regulations for Postgraduate Examination in Psychiatry

33.—PUBLIC HEALTH

See Regulations for Postgraduate Examination in Public Health

34 —PATHOLOGY

See Regulations for Postgraduate Examination in Pathology

35.—ANAESTHESIA

2 Years :

The subjects of the examination will be :—

- (a) Anaesthesia and Analgesia including pre-operative and post-operative care.
- (b) Medicine and Surgery.
- (c) The application of the basic sciences, including Anatomy and Pathology to the speciality of Anaesthesia.

Clinical Anaesthesia :

Anaesthesia and Analgesia in relation to the various systems.

Anaesthesia for surgical specialities including Paediatrics.

Otorhynolaryngology,

Orthopaedic,

Neurosurgery,

Cardio-pulmonary,

Surgery,

Ophthalmic,

Dental, etc.

Care and Sterilization of Apparatus and Instruments.

Medicine

General Principles of Medicine.

Special emphasis will be placed on the following :

Diseases of the Cardiovascular system.

Diseases of the Respiratory System.

Nutritional Disorders.

The Chronic Rheumatic Diseases.

Tropical Diseases and Helminthic infections.

Disorders of the Blood and Blood-Forming Organs.

Diseases of the Endocrine System.

Diseases of the Kidney and Urinary System.

Disturbances in Water and Electrolyte Balance and in

Acid-Base Equilibrium.

Diseases of the Digestive System.

Diseases of the Liver and Biliary Tract.

Diseases of the Pancreas.

Diseases of the Nervous System.

Surgery Including Gynaecology

General principles of Surgery which will give the anaesthetist an insight into the nature and extent of the surgical procedure to be embarked upon.

Anatomy

Applied Anatomy essential for the Practice of General and Regional Anaesthesia.

The Anatomy of the Head and Neck :

- Oral Cavity.**
- Larynx and Trachea.**
- The Pharynx.**
- Nose.**

The Anatomy of the Brain :

- Blood supply of the brain.**
- The vertebral column.**
- Brain Stem and Spinal cord.**
- The Meninges.**
- C.S.F. circulation.**
- The Cranial Nerves.**
- The Autonomic Nervous System.**

The Thorax :

- The Anatomy of the thoracic wall.**
- The Heart and great vessels.**
- The Lungs.**

The Abdomen :

- Anatomy of the abdominal wall.**
- The anatomy of all nervous plexuses and peripheral nerves.**

Pathology

As for all Specialties.

36.—RADIOLOGY

See Regulations for Postgraduate Examination in Pathology.

**PART IV.—CURRICULUM FOR THE FELLOWSHIP EXAMINATION OF THE
NIGERIA MEDICAL COUNCIL**

PART II EXAMINATION

MEDICINE, NEUROLOGY & PSYCHIATRY AND PUBLIC HEALTH

37.—MEDICINE

See Regulations for Postgraduate Examination in Medicine.

38.—NEUROLOGY

See Regulations for Postgraduate Examination in Neurology.

39.—PSYCHIATRY

See Regulations for Postgraduate Examination in Psychiatry.

40.—PUBLIC HEALTH

See Regulations for Postgraduate Examination in Public Health.

41.—OBSTETRICS AND GYNAECOLOGY

See Regulations for Postgraduate Examination in Obstetrics and Gynaecology.

42.—PATHOLOGY

See Regulations for Postgraduate Examination in Pathology.

43.—PAEDIATRICS

3rd and 4th Year

Clinical training in general medical Paediatrics which shall provide supervised experience with graded responsibility throughout the 2-year period. Full time or concurrent assignments should be arranged to assure proficiency in the diagnosis and management of infants and children in the following categories :

Ante natal Paediatrics.
New born infants.
Normal growth and Development.
Emotional Problems.
Nutritional Disorders.
Metabolic Diseases.
Infectious Diseases.
Surgical, Urological and Orthopaedic conditions.
Neurologic Disorders and Degenerative Diseases

Additional training and experience are desirable in such areas as Perinatal morbidity and mortality

Child Psychiatry.
Paediatric Allergy.
Paediatric Cardiology.
Paediatric Haematology.
Paediatric Endocrinology.
Paediatric Radiology.
Paediatric Therapy.

Awareness of the fact that a substantial part of Paediatrics practice concerns itself with the child who is either not sick at all or not sick enough to warrant hospitalization emphasises the importance of broad experience in active paediatric clinic.

Assignments may best be made to run concurrently with in-patient services, providing continuity of observation and follow-up.

Infant nutrition, normal growth and development, and immunization procedures, as well as the diagnosis and management of the acutely ill child, should be included.

Responsibility for care of children brought to the Emergency Room further strengthens the training programme by stimulating everyday problem of Paediatric practice.

Opportunity should be provided for the doctors to participate in running of :

1. Cerebral Palsy Clinics.
2. Rehabilitation Centres.
3. Special Education Programmes.
4. Mental Evaluation Projects.
5. Child Guidance Clinics and other ancillary facilities.

6. Candidates are required as well to spend at least 3 months in rural areas to have a first hand dealing with paediatric problems in these places.

Candidates are expected in addition to be familiar with modern trends in Paediatric practice and procedures, and may be expected at the end of the course to present a dissertation on an original work in Paediatrics they have taken part in.

44.—PUBLIC HEALTH

1. PUBLIC HEALTH ADMINISTRATION

The development of public health and social welfare services at different operational levels.

The Public Health legislations of the Federal Republic of Nigeria and a comparative study of health service organisations in various parts of the world¹.

International Health Organisations—including Regional and continental health organisations in Africa. Bilateral and Multilateral Technical Assistance in relation to health in developing countries.

2. STATISTICS

—Health Statistics—collection, analysis, processing and interpretation of data relating to population dynamics, mortality, education, housing and other environmental factors. Sampling and other statistical methods.

3. EPIDEMIOLOGY

Epidemiology of the main health problems in Africa².

4. ENVIRONMENTAL HEALTH

(a) Air and Ventilation

Pollution and purification of air—domestic, traffic and industrial—of increasing importance in developing countries. Measurements of ventilation criteria for overcrowding.

(b) Water

Sources, pollution and purification of water with emphasis on rural water supply.

Physical, Chemical and Bacteriological examination of water. Wash places and wash houses; Public swimming baths, water-borne diseases.

(c) Refuse and Sewage

Problems of collection and disposal—Incineration, control tipping, composting, aqua privy, septic tanks, soak-away pits, sewage lagoons, sewage works.

(d) Disposal of the Dead

Cemeteries, exhumation, cremation.

(e) Disposal of Industrial Refuse and Waste

(f) Houses and Buildings

Selection and improvement of sites.

Residential homes and huts in urban and fringe areas, shops and factories, houses and huts in rural areas, labour camps, sports stadia, theatres, cinemas and halls and fair grounds.

(g) Town and Country Planning including Fringe areas

(h) Radiation hazards.

5. NUTRITION AND FOOD

Nutrition and Health.

Production, storage, preservation, preparation, adulteration and distribution of food.

Applied Nutrition Programmes—surveys, home economics, community development, nutrition education, agricultural extension work.

Control of Food and Food Premises.

6. COMMUNICABLE DISEASES AND THEIR CONTROL

Problems of communicable diseases and programmes for their control and eradication.

7. MENTAL HEALTH

Preventive and social aspects of mental ill-health including special care, child guidance and marriage guidance.

8. HEALTH EDUCATION AND COMMUNITY DEVELOPMENT

Basic principles, their practical application and limitations.

9. MATERNAL AND CHILD HEALTH

Organisation of a service to care for and treat expectant and nursing mothers, neonates, infants and children.

The health of the pre-school child including the handicapped.

Family planning.

10. SCHOOL HEALTH

Organisation for the care and treatment of school children and young persons in institutions of learning. Special schools and training for the physically or mentally handicapped.

¹ This comparative study should include health services and legislation of the U.S.S.R., United States of America, United Kingdom, Sweden, India, Chile, Yugoslavia, Ceylon and the Federal Republic of Nigeria.

² Including epidemiology of non-infectious diseases.

11. OCCUPATIONAL HEALTH
Industrial Diseases, Industrial Accidents and their prevention. Industry and Urban Development. Domestic work places.
12. CARE OF THE AGED
13. DISASTER RELIEF
14. REHABILITATION
Physically and mentally handicapped.
15. HEALTH PLANNING
Principles, methodology, man-power training and evaluation.

45.—GENERAL SURGERY

Part II

This is a two-year course in General Surgery as well as Microbiology, Pathology and Special Therapeutics. The aim is to train surgeons who will :

(i) have a broad knowledge of some surgical specialties and will be able to deal with emergencies in these specialties namely, traumatology, including fractures and peripheral vascular surgery, neurosurgery, urology, and thoracic surgery ; and

(ii) receive additional specialist training in surgery of the abdomen and surgery of the head and neck.

A system of rotating resident appointments of three months each in three of these specialties will be adopted. In approved surgical centres where the specialties are not fully established, permission may be granted by the Board for such appointments to be undertaken under the supervision of a consultant with special interest in the particular specialty. The rest of the training period (one year and three months) will be spent in specialising in abdominal surgery including proctology, and surgery of the head and neck, as well as undertaking a course of study in pathology (especially morbid anatomy), special therapeutics, and microbiology. The course in the basic sciences during this period should run concurrently with the training programme in abdominal surgery including proctology, and surgery of the head and neck, and should cover a period of about six months. In special cases, permission may be granted to a candidate to offer a four months period of experimental or "investigative" surgery in addition to a three months' course in pathology, special therapeutics, and microbiology.

For the purposes of recognition by the Board, the training in the specialties and the specialist training in abdominal surgery including proctology, must be undertaken in approved surgical centres.

Examination

Part II : The examination will consist of :—

- (i) Two written papers in the Principles of General Surgery ; including questions in the specialties ;
- (ii) Practical (clinical) examination in General Surgery ;
- (iii) Oral examinations in
 - (a) Surgery ;
 - (b) Pathology, Microbiology, and Special Therapeutics.

All subjects must be passed at one examination.

46.—PAEDIATRIC SURGERY

The Fellowship examination in Paediatric Surgery is open to surgeons desiring specialization in Paediatric surgery. Before admission to this examination, candidates must have passed the first part of the Fellowship examination in surgery as prescribed by the Board.

Training Requirements

The candidate is to spend a period of training in general surgery as specified by the Board. He will then be required to spend not less than one year of training solely in Paediatric surgery.

Examination in Paediatric Surgery

The examination will consist of the following parts :

(1) Written examination

(i) Paper I—emphasis is laid here on anatomical, physiological and pathological considerations in Paediatric surgery and the general principles of management of paediatric surgical patients.

Paper II—This will deal with special paediatric surgical problems and operative paediatric surgery. Questions will be set to cover all regions in the field of paediatric surgery.

(2) Clinical Examination

(a) A long case will be presented to the candidate for examination, diagnosis and treatment. Time will be allowed for history taking and examination of the patient. There will then follow general discussions on the diagnosis and treatment.

(b) *Short Cases* : Many short cases will be presented in Paediatric surgery in such a way as to reflect everyday occurrences in paediatric surgical clinics.

(3) Viva Voce Examination

This will include general discussions on paediatric surgery. X-rays will be shown and pathological specimens will be presented mainly as a means of starting off discussions on various specialised fields of paediatric surgery.

(4) Operative Surgery

This session will include detailed discussions on operative techniques including indications for the particular operation and the pre and post operative management of cases.

Time to be allotted to the various sections of the examination will be decided upon by the Examining Board.

GENERAL

1. The Child the Hospital and the Surgeon.
2. Shock.
3. Fluid balance and Fluid replacement.
4. Anaesthetics—
Characteristic response of infants and children to anaesthesia.
5. Pre-Operative and Post-operative care of infants.
6. Drugs and antibacterial agents.
7. Thermal burns.
8. Tumours in infancy and childhood—classification and special varieties.

REGIONAL**Head and Neck**

Particular attention should be paid to the following, e.g. Cleft lip and palate.

Bronchogenic Cysts and Sinuses.

Tonsils and Adenoids.

Ear infections and Mastoiditis.

Tracheostomy.

Thorax

Note especially chest wall deformities such as sternal clefts, depression and protrusion deformities, congenital absence of ribs, tumours of the chest wall and diaphragmatic hernia.

The Oesophagus

Congenital Oesophageal atresia and Tracheo-oesophageal Fistula.

Oesophageal atresia and structure.

Hiatus Hernia

Achalasia of the Cardia

Heart and Great Vessels

Embryology of Cardiac Anomalies.

Patent ductus arteriosus.

Coarctation of the Aorta.

Anomalous pulmonary venous drainage—

Note especially the place of E.C.G. Radiography and Cardiac Catheterisation.

Bulbous Cordis Anomalies

(a) Transposition of Vessels.

(b) Tetralogy of Fallot.

(c) Pulmonary Atresia.

(d) Aortic Stenosis.

Defects of Septal Closure

(a) Atrial Septal Defect.

(b) Ventricular Septal Defects.

(c) Congenital Mitral Stenosis

Cardiac Physiology :

Pulmonary Hypertension and management.
Extracorporeal Circulation.

The Abdomen :

Consider especially Omphalitis, Umbilical remnants, conjoined twins.
Inguinal Hernia.
Hernia of Abdominal wall other than inguinal.

The Liver and Biliary Tract :

Especially obstructive jaundice.

The Pancreas :

Cysts and Neoplasms.
Pancreatitis.
Hypoglycaemia.

The Spleen :

Splenectomy.
Portal Hypertension.

The Stomach and Duodenum :

Congenital pre-pyloric Atresia.
Duodenal obstruction—Atresia.
Stenosis and Annular pancreas.
Congenital pyloric stenosis.
Malrotation of the Intestine.
Gastric Neoplasm.

The Small Intestine :

Duplication of the Alimentary Canal and its effects.
Atresia and Stenosis of Jejunum and Ileum.
Meconium Ileus.
Meckel's Diverticulum.
Mesenteric Cysts.
Regional Enteritis.
Peutz—Jueghers Syndrome—Interstitial Polyposis associated with Mucocutaneous pigmentation.
Small Bowel obstruction from other causes.
Internal Hernia.
Intussusception.

The Large Intestine :

Atresia and Stenosis.
Meconium plug Syndrome.
Perforation of the Colon in the new born.
Familial polyposis.
Chronic ulcerative Colitis.

*Appendicitis**Hirschsprungs Disease**Rectum and Anus*

Imperforate Anus and Anorectal atresia.
Rectal bleeding in the new born.
Prolapse of the rectum.
Sacrococcygeal Teratoma

*Neonatal Intestinal Obstruction**Retro Peritoneal Swellings**Genito-Urinary System*

Anomalies of the male genital tract.
Torsion of the testis.
Hypospadias.
Epispadias.

The Adrenal Glands :

Phaeochromocytoma and Neuroblastoma.
The Kidneys and Ureters.
Congenital anomalies.
Renal Cysts.
Renal Tumours especially Wilmstumour.
Hydronephrosis and Ureterocele.
Exstrophy of the Bladder.

Female Genital Tract :

Congenital Anomalies.
Vulval Synechia and Imperforate hymen.
Ovarian Cysts and Neoplasms of the ovary.
Tumours of Urogenital.
Sinus Remnants, e.g. Sarcoma botryoides.

The Musculo-Skeletal System :

Congenital Anomalies of bones and joints.
Scoliosis, Limp in childhood.
Fractures and joint injuries.
The Osteochondromas.
Bone tumours in childhood.
Infections of Bones and
Oestomyelitis.

The Nervous System.

Diagnostic procedures.
Congenital anomalies of the Neuraxis and related
Maldevelopmental disorders.
Spinal and Cranial dystrophism.
Dermoid, Teratoid and Teratomatous tumours.
Hydrocephalus.
Infections of the Nervous system.
Osteomyelitis of skull.
Intracerebral abscess.
Tumours of the Brain and spinal cord.
Miscellaneous condition.
Vascular anomalies.
Operative treatment of Epilepsy.
Surgery of Involuntary movements.
Surgery for pain.

Head and Neck :

Head injuries in infancy and childhood especially middle meningeal haemorrhage
Birth injuries
Torticollis

Special Fields of Paediatrics Surgery :

- (1) Surgery of premature infants.
- (2) Neonatal Surgery.

47.—NEUROLOGICAL SURGERY

A. The minimum requirements shall be :

- (1) Graduation from an approved Medical School.
- (2) 1 year of Rotating Internship or Equivalent.
- (3) $\frac{1}{2}$ year of Basic Sciences (including Neuroanatomy).
- (4) $1\frac{1}{2}$ years of Clinical General Surgery (with rotation through sub-specialities such as Orthopaedics, Urology, Thoracic Surgery, Neurological Surgery).
- (5) 1 year of (a) Neurology
(b) Neurophysiology, Neuropathology and Neurochemistry.
- (6) 3 years of Clinical Neurosurgery (including Neurodiagnosis, Operative Neurosurgery and Correlative Experimental Neurosurgery).

B. Candidates shall be required to show proficiency in the length, breadth and depth of the Principles of Neurology and Neurological Surgery, and thorough familiarity with current trends and thoughts in their various subdivisions and entities.

Final Examinations : in 2 parts

- (1) Written 4 papers (3 hours each)
 - (a) Principles of General Surgical Practice
 - (b) Neuroanatomy, Neurophysiology, Neurochemistry
 - (c) Neurology
 - (d) Neurosurgery.
- (2) Combined Clinical and Oral Examination in Neurosurgery, Neurodiagnosis and Neuropathology.

48.—CHEST SURGERY

Surgical Anatomy and embryology of cardiovascular tree related to chest Surgery.
Surgical anatomy and embryology.
Chest wall as a whole.
Diaphragm.
Lungs : details of segmental anatomy (dissect 10 lungs).
Alimentary tract to midgut.
Heart : Anatomy of defects.
Liver and Inferior Vena cava.

Elementary Electronics.

Routine Pulmonary function tests and their basis.

Effect of air-way obstruction at different levels and of pulmonary disease on blood flow. Cyanosis.

Relation between ventilation and perfusion of lungs.

Pulmonary.—Physical laws of flow ; pulmonary vascular resistance, pressure and flow measurement and techniques. Heart output.

Production of murmurs in heart and vascular tree.

Haemodynamic effect of fistulae and narrowing and widening at cardiac and vascular levels. Congenital Heart, Pressure gradients across heart valves and in pulmonary circulation.

Pulmonary hypertension.

Blood Volume, maintenance and measurement. Flow measurements blood coagulation. General venous pressure. Pressure recording. Failing circulation and cardiovascular modes of dying. Cardiac Tamponade.

Effects of acidosis and alkalosis heart and respiration and correction pH, pCO₂, Large vessel obstruction : Circulatory arrest : spontaneous and induced. Hypothermia (moderate and profound), complications and accidents applications.

Principles of cardiac bypass : complications. Prostheses in chest surgery. Basic electrocardiography. Arrhythmias.

Artificial pace maker and techniques of insertion.

Organisation of intensive care.

Management of open and closed chest wounds and thoraco-abdominal wounds.

Open and closing of chest wall and heart. Proficiency in the techniques of anastomosis.

Vascular.

Jejunogastric.

Gastro-Oesophageal.

Cardiac Resuscitation.

Prevention of hazards during operation.

Diagnostic procedures.

Assessment for surgery.

Certification for minimum numbers of certain procedures.

Oesophagoscopy.

Bronchoscopy.

Cardiac Catheterization and related procedures.

49.—ORTHOPAEDIC SURGERY

Part II of the F.M.C.S. Training course in orthopaedics will occupy 2 years and will entitle the candidate to sit for the Final Examination in orthopaedics.

Candidates must have passed the Part I Examinations in General Surgery.

3rd Year :

- (a) Selected lectures preferably by distinguished guests.
- (b) Active participation at clinical meetings.
- (c) Facio-Maxillary surgery in collaboration with the Board in Dental Surgery.
- (d) Extensive Literature review.
- (e) Attendance at Orthopaedic and Trauma Clinics.

4th Year (Final) :

- (a) More active participation in practical orthopaedics and Traumatology.
- (b) Three short essays per term to be submitted and review under the Tutorial system.
- (c) Literature review once a term.
- (d) Familiarisation courses in orthopaedic instruments and appliances : also in physical medicine and physiotherapy.

It is expected that any student who has completed this extended and rigorous training will then be ready to take the final F.M.C.S. (Orthopaedics) examination which will be run along similar lines to that in General Surgery.

50.—OTORHINOLARYNGOLOGY

The training should be designed to cover the whole field of Otorhinolaryngology during a period of two years. Candidates must have passed the Part I Examination in General Surgery.

*Clinical Lectures**The Larynx :*

- (i) Trauma.
- (ii) Acute and chronic infections.
- (iii) Stenosis.
- (iv) Organic and functional nervous affections of the larynx and pharynx.
- (v) Benign tumours of the larynx.
- (vi) Malignant growths of the larynx.
- (vii) Surgery of the larynx.

The Ear :

- (i) Diseases and tumours of external ear.
- (ii) Acute otitis media, Acute mastoiditis.
- (iii) Chronic otitis media, chronic mastoiditis.
- (iv) Complications of otitis media.
 - (1) Extradural abscess.
 - (2) Lateral sinus thrombosis.
 - (3) Pituititis.
 - (4) Cerebral and Cerebellar abscess.
 - (5) Meningitis
 - (6) Paralysis of the facial nerve.
 - (7) Otitic hydrocephalus.
- (v) Otosclerosis.
- (vi) Vertigo and Meniere's Syndrome.
- (vii) Allergic otitis media.
- (viii) Acoustic trauma. Occupational deafness.
- (ix) Deafness.

- (a) Conductive
- (b) Perceptive
- (c) Psychological
- (d) Hysterical deafness

- (x) Training and education of the deaf.
- (xi) Deafness and hearing aids.
- (xii) Physical principles of audiometry and hearing aids.
- (xiii) Reconstructive surgery of the middle ear.

The Nose and Sinuses :

- (i) Applied physiology of the nose and nasal accessory sinuses.
- (ii) Injuries, abnormalities.
- (iii) Acute and chronic infections and allergic conditions of the nose and nasal sinuses.
- (iv) Epistaxis, foreign bodies in the nose and sinuses.
- (v) Acute and chronic sinusitis—General consideration.
- (vi) Acute and chronic sinusitis—Regional consideration.
- (vii) Chronic sinusitis. Complications—extensions to the orbit, orbital cellulitis, localised bone necrosis.
- (viii) New growths of the nose and sinuses.
- (ix) New growths of the nasopharynx.
- (x) Diseases of the lachrymal duct.
- (xi) Naso-orbital tumours.

The Oesophagus :

- (i) Inflammatory changes in the oesophagus.
- (ii) Growths of the oesophagus.
- (iii) Spasmodic conditions of the oesophagus. Peterson-Brown Kelly Syndrome Acalasia Cardia.

The Trachea and Bronchi :

- (i) Endoscopy. Foreign bodies
- (ii) Diseases of the trachea
- (iii) Diseases of the Bronchus

The Pharynx :

- (i) Acute pharyngitis. Vincent's Angina Diphtheria.
- (ii) Chronic Pharyngitis.
- (iii) Acute and chronic tonsillitis and peritonsillar abscess.
- (iv) Retropharyngeal adenitis and abscess.
- (v) Palsis of the pharynx and hypopharynx.
- (vi) New growths of the pharynx.

Plastic Surgery :

- Maxillo-facial surgery.
- Plastic surgery.

Neurology :

- (i) Otitic hydrocephalus
- (ii) Cerebral abscess
- (iii) Headache and faceache.
- (iv) Intracranial infections
- (v) Intracranial tumours
- (vi) Common neurological lesions mimicking otological and laryngological lesions.
- (vii) Acoustic neurofibroma
- (viii) Head injuries.

Pathology and Bacteriology :

- (i) Haemology and serology.
- (ii) Transfusion and blood grouping
- (iii) Bacteriology of otitis and bacteriological control of antibiotics treatment.
- (iv) Inflammatory and allergic conditions of the ear, nose and throat.
- (v) Benign tumours of the nose and throat.
- (vi) Malignant tumours of the ear and throat.
- (vii) Malignant tumours of the nose and sinuses.
- (viii) Rarer conditions and complications of diseases of the ear, nose and throat.

Radiology :

- (i) The mastoid process.
- (ii) The accessory nasal sinuses.
- (iii) The oesophagus.
- (iv) The air passages and chest.

Radiotherapy :

- (i) The purpose and technique of radio-therapy.
- (ii) Radiation treatment of carcinoma of the larynx.
- (iii) Radiation treatment of carcinoma of the pharynx.
- (iv) Radiation treatment of the tonsils and fauces, ear and nose.

Allied Subjects :

- (i) The treatment of diseases of the throat, nose and ear by physical methods.
- (ii) The relationship of dental diseases to diseases of throat, nose and ear.
- (iii) The relationship of ophthalmology to otorhinolaryngology.

Demonstrations are made in conjunction with lectures of examples of the diseases, of methods of investigation, of treatment, medical and surgical.

Demonstrations of the bacteriological and pathological aspects are made at appropriate intervals and there are exhibitions of X-ray films and fluoroscopic examinations.

The students would take up jobs in approved Hospitals under adequate supervision after the course of lectures and demonstrations for appropriate periods which will be decided upon by the Board of Examiners.

51.—RADIOLOGY

See Regulations for Postgraduate Examination in Radiology.

52.—MISCELLANEOUS

(a) The Syllabuses in the following are being prepared and will be published later, that is :—

DENTAL SURGERY

GENERAL PRACTICE

OPHTHALMOLOGY.

(b) For list of approved institutions, contact the Registrar, Nigeria Medical Council 12/14 Yakubu Gowon Street, Lagos.

MADE at Lagos this 7th day of September 1970.

J. OLU. MABAYOJE,
Registrar,
Nigeria Medical Council