

# **PROFESSIONAL REVIEW RULES (Revised)**

(Applicable to February – March 2012 Review and Onwards)

## **1. INTRODUCTION**

Set out here are the Rules for acceptance of a candidate into the class of Corporate Member of the Institution of Engineers, Sri Lanka, herein after referred to as the IESL.

- 1.1 A candidate for election as a Corporate Member of the IESL is required to have obtained an approved academic qualification in one of the many disciplines of engineering and also to have had in that discipline adequate training and experience, and also attained the expected competences, all of which will be assessed at a Professional Review.
- 1.2 Details of the requirements in regard to training, experience and expected competences, together with the procedure according to which candidates may apply for election and attend the Professional Review are set out in these rules.
- 1.3 Candidates should appreciate the fact that they are dependent on senior members of the profession for effectively directing their work, imparting knowledge and enabling them to gain experience, and that they must therefore seek and obtain the assistance and guidance of their seniors at all times.
- 1.4 Candidates shall be enrolled as Associate Members of the IESL for a minimum period of one year prior to applying for transfer to Corporate Membership.

## **2. DEFINITIONS**

### **2.1 Chartered Engineer**

A Chartered Engineer is one who is capable of assuming personal Professional Responsibility for the analysis and application of Engineering principles in the fundamental processes of Investigation, Planning, Design, Construction, Operation, Maintenance, Management and Development of Engineering works or plant, or in Engineering Research and/or Engineering Education. He will be involved with the identification of solutions to problems, management and direction of high-risk and resource intensive projects. He is able to communicate his ideas clearly, concisely and intelligibly to others. His work requires the exercise of original thought and judgement, and the ability to supervise the Technical and Managerial work of others. Professional judgement is the key feature of his role, applied to the assumption of responsibility for the direction/demonstration of important tasks, including the profitable management of industrial and commercial enterprises.

### **2.2 Corporate Member**

A Corporate Member of the IESL is one who has satisfied the Council of the IESL that he/she has attained such standard of education, training and experience as required by the Council to testify to his/her proficiency as a Chartered Engineer. He/she should be on the Roll of the Institution and is entitled to use the abbreviation CEng (Sri Lanka).

Every individual member of the profession shall at all times so order his conduct as to uphold the dignity and reputation of his profession and to safeguard the public interest in matters of safety, environment and health and otherwise. He shall exercise his professional skill and judgment to the best of his ability and discharge his professional responsibilities with integrity.

### **2.3 Education**

A candidate is required to have successfully completed the examinations as conducted by the IESL or have an equivalent accredited qualification as set out in Rule 3.1.

### **2.4 Recognized Training**

Recognized Training is the structured training undergone by a candidate with “approved academic qualification” as set out in Rule 3.1, at an “approved organization” (see Rule 5.1.1) to adapt himself from an academic to an industrial environment, acquiring the practical skills and a knowledge of the work essential for his future employment, so that he should be able to shoulder responsibility with confidence under decreasing supervision by the end of his training. During this training he should be under the guidance of a Corporate Member of the IESL. Details of the Training required for different disciplines are given in Annex A.

### **2.5 Responsible Experience**

Responsible Experience is the experience gained in a responsible position in the field of Engineering he has specialized in and its applications, under the guidance of a Corporate Member of the IESL, after satisfying the Approved Academic Qualification and Recognized Training requirements.

### **2.6 Competences**

Recognition as a Chartered Engineer is open to any engineer who can demonstrate competence to perform professional work to the necessary standards. Competence includes the knowledge, understanding and skills that underpin performance. Engineers become competent through a mixture of education and professional development.

In keeping with international advancements in the recognition and registration of engineering professionals, the IESL will expect engineers seeking registration as Chartered Engineers, to demonstrate the following five core competences namely,

- Knowledge and understanding of engineering principles
- Practical application of engineering knowledge
- Leadership and management
- Communication and interpersonal skills
- Professional conduct

Details of the competences expected of a Chartered Engineer are given in Annex B.

## **3. PRE-QUALIFICATIONS FOR PROFESSIONAL REVIEW**

A candidate for election as a Corporate Member of the IESL, is required to have obtained an approved academic qualification in one of the many disciplines of engineering and also to have had in that discipline Recognized Training and Responsible Experience as set out below.

### 3.1 Academic Qualifications

Parts I and II of the Examinations (old syllabus) conducted by the IESL

or

Parts I, II and III of the Examinations (new syllabus) conducted by the IESL

or

Degree in Engineering approved by the IESL

or

Other equivalent qualifications (in whole or in part) approved by the IESL exempting the candidate from **all Parts** of the IESL Examination. Particulars of these could be obtained from the Secretariat of the IESL.

### 3.2 Recognized Training and Responsible Experience

An application should be made only when a candidate has completed the minimum stipulated period in aggregate, of Recognized Training and Responsible Experience, on the closing date for applications.

Of this period up to a maximum of six (6) months only will be considered prior to his obtaining the qualifications as required for Associate Membership of the IESL. This will apply to,

- (i) the industrial and workshop training of graduates, in continuous periods of not less than 2 months(subject to provisions in Sub Section 5.8.1).
- (ii) the work experience in the relevant field of candidates who have not followed full-time academic courses. In such cases half or more of the period of work experience will be counted as being equivalent to the training period (six months) prior to satisfying the academic requirements as per 3.1(subject to provisions in Sub Section 5.8.1).

(Rule 5 sets out in detail requirements in respect of Recognized Training and Responsible Experience)

### 3.3 Engineering Research and/or Engineering Education Route

3.3.1 A candidate who wishes to be examined on the basis of engineering research and/or engineering education at undergraduate or higher level must -

3.3.1.1 Possess an acceptable research Post Graduate Degree in Engineering (which normally takes two academic years) from an Institution recognized by the IESL;

3.3.1.2 Be engaged on engineering research work or engineering education at undergraduate or higher level at the time of his application, in a Research institution recognized by the IESL; and

3.3.1.3 Training requirements as set out in Rule 5.4.1 under Training for Research Candidates in Rule 5.4

- 3.3.2 A candidate who wishes to be examined on the basis of engineering education at technologist or technician level must –
- 3.3.2.1 Possess a Degree in Engineering approved by the IESL;
  - 3.3.2.2 Possess an acceptable research Post Graduate Degree in Engineering (which normally takes two academic years) from an Institution recognized by the IESL;
  - 3.3.2.3 be engaged in engineering education at a technologist or technician level or be engaged in engineering research or projects, at the time of his application, for a period of twice the duration of that required for undergraduate education, in an institution recognized by the IESL;
- and
- 3.3.2.4 satisfy the training requirements as set out in Rule 5.2  
**or**  
the training requirements as set out in Rule 5.4.1 under Training for Research Candidates in Rule 5.4.

## **4. AIM, SCOPE and COMPOSITION OF THE PROFESSIONAL REVIEW**

### **4.1 Aim and Scope**

- 4.1.1 The Professional Review conducted by the IESL is intended to assess the content, quality and duration, of the training and experience of a candidate. The Review is designed to test the candidate's status in respect of the competences required of a Chartered Engineer, such as:
- 4.1.1.1 grasp of the application of engineering principles to the solution of problems arising in the fundamental process of investigation, planning, design, construction, operation, maintenance and development of engineering works or plant, or in research and in engineering education;.
  - 4.1.1.2 ability to apply in practice, the theory relating to his discipline of engineering and to demonstrate that he has acquired an understanding of the fundamental processes by participating in and contributing to those processes;.
  - 4.1.1.3 ability to demonstrate a professional approach and capacity to accept professional and managerial leadership and responsibility;.
  - 4.1.1.4 ability to communicate clearly, concisely and intelligibly; and.
  - 4.1.1.5 Display social responsibility and concerns for safety, health and environmental issues in the practice of engineering, engage in CPD to ensure competence in areas of present and future intended practice, and be actively involved with professional institutions.

## 4.2 Composition

The Professional Review shall comprise:

- 4.2.1 An assessment of Recognized Training and Responsible Experience gained by the candidate (Refer Rule 5).
- 4.2.2 An evaluation of the Report on Recognized Training and Responsible Experience (Refer Rule 6).
- 4.2.3 An evaluation of the Design and calculations, drawings, specifications, BOQ or Project (Refer Rule 7).
- 4.2.4 An interview by a panel of two (2) Corporate Members to assess the candidate's compliance with the five core competences as laid down in Form IESL PR1b, Annex B.1 (Refer Rule 8).
- 4.2.5 Written Tests as set out in Rule 9.

## 5. DURATION and CONTENT of RECOGNIZED TRAINING and RESPONSIBLE EXPERIENCE

### 5.1 General

Set out in this Section are the requirements in respect of training, detailing durations, content and manner of presentation.

- 5.1.1 It is necessary that candidates should have had **acceptable facilities at their place of employment** to receive proper guidance from Corporate Members of the IESL as to their training and experience which will enable them, in time, to become competent members of the profession and eligible for Corporate Membership. Such organizations will be recognized as such by the IESL, and will be referred to as an **“approved organization”**.
- 5.1.2 Where in-house facilities are not available the candidate should arrange with his employer for release to an 'approved organization' having the facilities for training.
- 5.1.3 A **minimum** of forty eight (48) months in aggregate of Recognized Training and Responsible Experience as defined in Rule 3.2 is required for admission as a Corporate Member of the IESL.
- 5.1.4 It is the responsibility of the candidate to obtain for himself/herself the training and experience to meet the requirements set out in these Rules.
- 5.1.5 During the minimum 48 months period of training and experience, candidates should have acquired a sufficient and varied knowledge of engineering techniques, methods, materials and management pertaining to his field of engineering.

- 5.1.6 For purposes of clarity in defining the scope of these 48 months of training and experience, and setting out acceptable deviations from general requirements, the period of 48 months is divided hereafter into two periods of **24 months recognized training and 24 months responsible experience**.
- 5.1.7 Where in-house facilities are not available and release for training cannot be arranged, then the candidate will be required to have **thirty six (36) months recognized training and twenty four (24) months responsible experience** under the supervision of a Mentor, who will be a Corporate Member of the IESL. Mentoring will be done in accordance with the guidelines set out in Annex C.

## 5.2 Training

5.2.1 The period of training should afford the Trainee adequate opportunity to adapt himself from an academic to an industrial environment, during the course of which he should be directed to acquire the practical skills and knowledge of the work essential for his future employment, to be able to shoulder responsibility with confidence under decreasing supervision.

5.2.1.1 During the Training period the Trainee should acquaint himself of :

- a The professional conduct of a Chartered Engineer, as set out in the Code of Ethics of the IESL.
- b The need to provide suitable safety measures in every Engineering project.
- c His responsibilities to his employer, his colleagues, other Engineers and to the society at large.
- d The importance and relevance of his theoretical knowledge to the design, construction, operation, maintenance etc. of the service, which the employing organization deals with.
- e The general problems affecting an industrial organization such as financial, economic, commercial limitations; constraints brought about by the quality and number of staff, availability of material resources and the need to conserve the natural environment, and the operational and maintenance requirements that may affect engineering decisions.
- f The vital importance of good industrial relations, safety, health and welfare, both in relation to employees and the general public.
- g The need to understand the point of view of others and to promote good personal communications at all levels.
- h The need to exercise sound judgment and to accept responsibility for it.
- i The need to develop his activities to the best advantages of the profession.
- J Environmental and Social issues, an awareness of the current laws and rules pertaining to these and current trends in these areas.

5.2.1.2 The period of Recognized Training should consist of the following elements:

- a. Induction
- b. Practical Skills
- c. General Engineering Training
- d. Directed Objective Training

5.2.1.2.1 During Induction, trainees are normally assisted to adapt themselves to change from an Academic to an Industrial environment. For this purpose they should be oriented in their organizations, be informed of service conditions, obligations and privileges, occupational hazards and safety precautions to be taken, trade union matters, environmental issues etc.

5.2.1.2.2 A period of training in Practical skills essential for the Trainee's future development and also for him to appreciate the work of the skilled craftsmen, should be given and the Trainee should carry out important basic items of work himself.

5.2.1.2.3 The period of General Engineering Training will normally occupy more than half of the total training period. During this time the trainee should be introduced to the work of as many fields of engineering to which he belongs.

5.2.1.2.4 The final period of Recognized Training should be directed in preparing the Trainee for the status he is to hold subsequent to completion of the full period of training. During this time he will be allowed to shoulder responsibility in carrying out specific jobs under decreasing supervision in order to stimulate his interest and build up his confidence.

5.2.1.2.5 Throughout his training period the Trainee is required to maintain a **Log Book** of his activities to ensure that the important features of his training are recorded, and endorsed by his Employer / Chartered Engineer / Mentor. This Log Book will facilitate the recognition of a candidate's training by the IESL (vide Rule 5.7).

5.2.1 Recognized training requirements for the various disciplines are set out in Annex A.

5.2.3 Training requirements for engineering disciplines not covered in Annex A must be referred to the Executive Secretary for acceptance, prior to embarking on a training programme.

5.2.4 Guidelines for Mentoring are set out in Annex C.

### 5.3 Responsible Experience

#### 5.3.1 Twenty Four (24) months Responsible Experience

After satisfying the Educational and Training requirements, a candidate for Corporate Membership must satisfy the IESL that he has had not less than 24 months experience in a responsible position in the field of Engineering he has specialized in and its applications. During this period the candidate shall receive guidance from a Corporate Member of the IESL.

- 5.3.2 This experience in the capacity of an engineer should be designed to broaden the candidate's understanding of engineering practice in the relevant discipline. The experience should be varied and it is desirable that the candidate should have the opportunities for engaging in tasks of gradually increasing responsibility.
- 5.3.3 This professional experience shall not be of a routine nature and must involve the exercise of engineering judgment, display of original ideas, and the taking of Engineering decisions with responsibility to cover both technical and managerial aspects of his work.
- 5.3.4 Civil Engineers should have at least six (6) months' experience in a Design office in addition to the training requirements laid down in A.4.1.2 to make up a total of 12 months in a Designs office.
- 5.3.5 In the case where the candidate is mentored, the Mentor shall also supervise the Responsible Experience.

#### **5.4 Engineering Research and/or Education Route**

- 5.4.1 A Candidate who wishes to be examined on the basis of engineering research must have at least 72 months experience in Engineering after obtaining academic qualifications required for Associate Membership.
- 5.4.1.1 In addition to the academic requirements set out in rule 3.3.1, candidates must meet the following training and experience requirements.
- 5.4.1.1.1 Has acquired (whilst holding a responsible position of at least a senior lecturer in engineering at an IESL recognized Higher Educational Institution or holding an equivalent position and equivalent qualification in Engineering in a Research Institution recognized by the IESL) for a period of at least 24 months in responsible practical experience under a Chartered Engineer.
- 5.4.1.1.2 Have had in addition to 5.4.1.1.1
- At least 36 months in aggregate research experience in engineering which may include;
- Up to one (1) year on an approved course of full time post graduate study duly completed.
  - Up to three (3) yrs on research for successful completion of a higher degree for which the following time frames are counted.
- Masters Degree in an Engineering field through course work: Up to 01 year.  
 Masters Degree in an Engineering field with Research or M Phil with Research:  
 up to 02 years  
 Doctorate Degree in Engineering: up to 03 years
- Research carried out whilst holding the position of Senior lecturer in Engineering or above at a Higher Educational Institution or holding an equivalent position and qualification in a Research Institution recognized by the IESL. In case of the Research Institution the Candidate should work under an Academic / Professional having a Post Graduate qualifications of M Phil or higher.

- 5.4.1.2 A Research and/or Engineering Education candidate will, in addition, have to appear for the Interview and the Written Papers 'A' and 'B' as for a candidate applying through the normal route.

## **5.5 Candidates working in non-Engineering Institutions / Organizations**

Candidates who are employed in non-engineering institutions or organizations will be eligible to sit the Professional Review provided they possess 24 months recognized training and 12 months responsible engineering experience, and a further 36 months in a responsible position in the institution or organization. During this period he shall be under the supervision of a Chartered Engineer/Mentor.

## **5.6 Corporate Members of Professional Institutions recognized by the IESL**

Engineers, who are Corporate Members of other engineering Institutions recognized by the IESL, are eligible to apply for direct entry as Corporate Members. Clause 1.4 will not apply in this instance. Their applications will be reviewed on a case-by-case basis.

## **5.7 Log Book**

- 5.7.1 The **submission of a Training Log Book is compulsory**. A comprehensive record of Training and Experience should be entered by the candidate in his Log Book, such records being certified by the Engineer in charge of the work or the Mentor, at the end of each period of training.
- 5.7.2 Training Log Books will be issued to Student Members and Associate Members of the IESL and duly filled Log Books shall be submitted at the Professional Review.
- 5.7.3 Training Log Books should not be used merely to catalogue the actual work done, but should be used to give small sketches and other details of problems which arose and how these were overcome, and any other notable features of a particular training period. The Training Log Book should provide a systematic, neat, accurate, comprehensive and detailed record of training and hands-on experience.
- 5.7.4 A candidate may in addition to the Training Log Book submit duly certified drawings, sketches, calculations, technical papers, photographic records etc. prepared personally by him which will facilitate assessment at the Professional Review.

## **5.8 Exceptions**

### **5.8.1 Recognized Training**

- 5.8.1.1 Candidates who have successfully completed a post-graduate research degree of a recognized academic institution, which requires a minimum of two (2) academic years may count half such period up to a maximum of twelve (12) months towards part of the recognized training (Rule 5.1.6 and 5.1.7).

Civil, Mechanical, Electrical, Electronic and Chemical engineers who have successfully completed such a course may count up to a maximum of six (6) months of the allowed 12 months towards Design Office training laid down in A.4.1.2,

A.9.1.1.2, A.6.1.2, A.6.2.3 and A.3.1.2, provided that the Design content of the post-graduate course is such that it is equivalent to the work that is normally carried out in a Designs Office and that the calculations and drawings are submitted as normally required, in respect of the Designs work carried out in the course of the research study.

5.8.1.2 A maximum period of six (6) months practical training carried out prior to meeting academic requirements for Associate Membership may be counted towards training, provided such training was adequately supervised by a Corporate Member, and the applicant was actually and actively engaged in the work and provided such practical training contributed directly to the development of the capabilities of the Engineer in the discipline in which he specializes, provided that such training was obtained in minimum continuous periods of two (2) months at a time. Industrial training carried out as a component of an under-graduate degree programme in engineering may also be similarly considered.

## **5.8.2 Responsible Experience**

5.8.2.1 The full period of teaching experience at the Universities or other Tertiary Education Institutions in the relevant field of Engineering after the acquisition of a Post Graduate Research Degree of a minimum duration of two years full time or equivalent, may be counted towards the period of responsible experience.

5.8.2.2 For Civil, Mechanical, Electrical , Electronics, and Chemical Engineering candidates a further period of up to six (6) months may be counted towards Design office experience as laid down in A.4.1.2, A.9.1.1.2, A.6.1.2, A.6.2.3 and A.3.1.2 in addition to the 6 months training period claimed under 5.8.1.1 for the design work carried out for the Post Graduate Research Degree provided the Design content of the Post Graduate Research Course is such that it is equivalent to the work that is normally carried out in a Designs Office and that the calculations, specifications and drawings are submitted as normally required in respect of the Designs work carried out in the course of the Research Study. These two periods of six months each will **not** be considered to run concurrently.

## **5.8.3 Responsible Experience in Lieu of Recognized Training**

5.8.3.1 Candidates who are unable to satisfy the Council that the training for the professional review has been obtained in the manner specified, may apply for recognition of a period of experience in a responsible position with exposure to related work, not less than twice the specified period, in lieu of training, except in the case of Civil Engineering candidates, who may claim such experience only in respect of any period of training shortfall beyond the six (06) months required at A.4.1.2. The candidate should be under the guidance of a Mentor.

5.8.3.2 All Engineering Graduates who serve on the Staff of the Universities or other Tertiary Education Institutions as Lecturers, Asst. Lecturers, Teaching Assistants, and Instructors may count such experience up to a maximum of twenty four (24) months in lieu of training. Half this period up to a maximum of twelve (12) months will be counted for training.

## **6. REPORT ON RECOGNIZED TRAINING AND RESPONSIBLE EXPERIENCE**

- 6.1 A candidate is required to submit along with his application a Report on his Recognized Training and Responsible Experience.

The main objective of the Report on Training and Experience is to demonstrate that the candidate has achieved the degree of **professional competence** required of a Corporate Member of the IESL and has exercised responsibility at the required level. The Report which will be in the format set out below will take the form of a record of the candidate's training and responsible experience highlighting those activities which demonstrate competence and senior responsibility.

**In the Report the candidate should endeavor to display his/her understanding and practice of the five core competences wherever possible.**

- 6.2 The following points should be observed when preparing the Report:

- 6.2.1 It is essential to be as succinct as possible and every effort should be made to confine the report to the number of words specified in Rules 6.3.2 and 6.3.3.
- 6.2.2 It is essential to describe as clearly as possible what work has been done and what responsibilities the candidate has borne. General statements such as "I was involved in the construction of ..." should be avoided since such statements do not help the Panel to accurately assess the work done by the candidate.
- 6.2.3 Wherever possible candidates should indicate the relevance of their work to the activities of the Organization, the size and complexity of the projects or work they have had responsibility for and where appropriate indicate costs and budgets for which they have had overall control.
- 6.2.4 The Organizational Charts are particularly important and should give a clear indication of the candidate's position in the Organization. The optimum arrangement is to show two or three levels of authority above that of the candidates post and all levels below. If anyone shown in the Organization chart is a member of the IESL or similar professional institution, his level of membership should be shown.

### **6.3 The Structure of the Report**

The Report on Recognized Training and Responsible Experience should be written in the first person and be concise. The Report which should be submitted in triplicate, should be printed / typewritten on A4 size paper with double spacing, and comprise four distinct sections, as indicated below:

- 6.3.1 Summary of the periods covered during Recognized Training and Responsible Experience showing durations, tabulated as per Format given in the Annex D. The candidate will detail the inclusive dates of each sub-division of training and experience, and the duration of such periods. A Corporate Member of the IESL should sign alongside from personal knowledge in certification of each such period.

In the event of the certifying officer not being a Sponsor/Supporter of the candidate's application, then his/her name and Class of membership should be clearly stated, together with his/her signature.

- 6.3.2 An account of the significant areas covered during the period of Recognized Training and Responsible Experience. The candidate will, as an introduction to this report set out in chronological order, relevant particulars of his training and experience to date. He will detail the inclusive dates of each sub-division of training and experience, and the duration of such periods.

The candidate must describe the tasks on which he has been engaged whether in investigation, planning, design, construction, operation, maintenance, manufacture or research and education. The account should explain clearly the precise position the candidate has occupied in each case, and the degree of responsibility assigned to him and should indicate where appropriate the magnitude and cost of works he has been engaged on.

This section should be **not less than 2000 words** with a maximum of 3000 words.

- 6.3.3 As indicated in Rule 2.6, applicants will be assessed on five Competences. The report while highlighting the applicant's career progression should also be structured so that the applicant's attaining of a good level in each competence is highlighted. This is best done by giving a few examples such as:

For Competence 2 - Practical application of Engineering Knowledge  
Give instances where engineering theory has been used by the applicant to create something innovative or solve an existing problem.

For Competence 3 - Leadership & Management  
Give instances where applicant successfully managed a project(s), Improved.  
existing systems, has been involved in staff development especially that of subordinate engineers and technical staff, etc.

For Competence 5 - Professional Conduct  
Give instances where applicant successfully used environmentally friendly solutions, applied/improved safe work practices, involvement with IESL, community, etc.

This account would be of approximately **1500 words**.

The information presented in Rules 6.3.2.and 6.3.3 will demonstrate the extent to which the candidate complies with the first two competences as set out in **Annex B**.

- 6.3.4 The candidate will also submit, with the report, an Organization Chart in respect of the last three positions held by him/her. Corporate Members, who should preferably be representatives of the employers, too should certify these Charts.
- 6.3.5 It is very important that the Report should be well structured and written in grammatically correct English. Wherever possible the Report should be substantiated with diagrams, tables, graphs, photographs, etc. The Corporate Member supporting the candidate's application should ensure the veracity of the Report and the submissions of the candidate are worthy of a competent professional.

## 7. DESIGN

7.1 Design is the heart of engineering and it is essential that all engineers, whether or not they ultimately become designers, should at least have an insight into the design process.

Candidates will be required to submit a design supported by calculations, specifications, drawings and priced B.O.Q. where relevant, as set out below.

### 7.1.1 Civil Engineering Candidates

7.1.1.1 A Civil Engineering candidate will submit:

7.1.1.1.1 a minimum of 3 sheets of size 'A1' (594mm x 841mm) of detailed drawings of which at least one (1) sheet should be drawn entirely by the candidate. Certified copies of originals drawn by the candidate would also be acceptable. Computer Aided Designs and documentation are acceptable, and here the minimum drawing size should be 'A3' (297mm x 420mm);

7.1.1.1.2 detailed design calculations relating to a candidate's submitted drawings; or calculations and flow charts, prepared by the candidate for a properly written and executed computer programme; and

7.1.1.1.3 a priced B.O.Q. which refers to a design which will demonstrate the candidate's ability to carry out designs and estimates for substantial projects relating to his field of experience.

7.1.1.1.4 The B.O.Q. should include:

(a) taking-off sheets relating either to one of the submitted drawings or to another drawing not necessarily prepared by him which also must be submitted; and

(b) prices of basic engineering materials, basic wage rates and work norms adopted. (A candidate should be able to demonstrate at the interview justification for rates given in the bill of quantities).

7.1.1.1.5 Any additional information to substantiate his experience could also be submitted.

7.1.1.1.6 The Design Report should include a statement from the Chartered Engineer, under whose guidance the design is done, confirming that he/she has continuously monitored the preparation of the Design.

**7.1.2 (a) Electrical, Electronic and Telecommunication Engineering Candidates**  
**(b) Computer Engineering & Information Technology Candidates**

7.1.2.1 All Electrical, Electronic and Telecommunication Engineering and Computer Engineering & Information Technology candidates must submit –

Either (a) a design supported by analysis, computations, drawings etc. in the form of a report;

or (b) results of a project study in the form of a dissertation normally not less than 6000 words.

**7.1.3 (a) Mechanical Engineering Candidates**  
**(b) Manufacturing Engineering Candidates**

7.1.3.1 All Mechanical Engineering and Manufacturing Engineering candidates must submit a mechanical/manufacturing engineering design supported by calculations, specifications and working drawings and priced B.O.Q where:

7.1.3.1.1 a minimum of 2 sheets of size 'A1' (594mm x 841mm) of detailed drawings of either manual or computer aided drawings. Freehand sketches on which the drawings are based should be drawn entirely by the candidate. Certified copies of originals drawn by him would also be acceptable. Computer Aided Drawings are acceptable, and here the minimum drawing size should be 'A3' (297mm x 420mm);

7.1.3.1.2 detailed design calculations relating to a candidate's submitted drawings; or calculations and flow charts, prepared by the candidate. Computer aided designs and documentation are acceptable; and

7.1.3.1.3 a priced B.O.Q. which refers to a design and which will demonstrate the candidate's ability to carry out designs and estimates for projects relating to his field of experience.

**7.1.4 Chemical Engineering Candidates**

7.1.4.1 All Chemical Engineering candidates must submit a chemical engineering design supported by calculations and drawings and with a list of major items and engineering specifications.

7.1.4.2 All documents referred to in this rule should be certified by a Corporate Member under whom the work has been done, or in exceptional circumstances by another Corporate Member from personal knowledge.

7.1.4.3 In the event a candidate cannot satisfy the requirements under clause 7.1.4.1 he may take the Design Project Examination set by the IESL.

7.1.4.4 Computer aided designs and drawings will be acceptable.

- 7.1.5 (a) Agricultural and Plantation Engineering Candidates**  
**(b) Mining Engineering & Earth Resources Engineering Candidates**  
**(c) Textile Engineering Candidates**  
**(d) Materials and Metallurgical Engineering Candidates**  
**(e) Marine Engineering Candidates**

7.1.5.1 All Agricultural and Plantation Engineering, Mining Engineering and Earth Resources Engineering, Textile Engineering, Materials and Metallurgical Engineering and Marine Engineering candidates must submit –

either (a) a design supported by analysis, computations, drawings, specifications, etc. in the form of a report;

or (b) results of a project study in the form of a dissertation normally not less than 6000 words.

### **7.1.6 Building Services Engineering Candidates**

7.1.6.1 All Building Services Engineering Candidates must submit:

7.1.6.1.1 a design report which includes at least three (3) designs in any of the following disciplines. But it is not necessary to select all three (3) disciplines from one project.

Heating, lighting, refrigeration, acoustics, air-conditioning, ventilation, water, plumbing, power systems, vertical transport, control systems, fire and security, alarm systems, façade engineering, public health, integrated system, intelligent building.

All required analysis, computations, sketches, specifications should include in the report;

7.1.6.1.2 a minimum of 3 sheets of size 'A1' (594mm x 841mm) of detailed drawings related to the above designs. At least one (1) sheet from these three drawings should be drawn entirely by the candidate. Certified copies of originals drawn by the Candidate would also be acceptable; Computer aided designs and documentation are acceptable, and here the minimum drawing size should be 'A3' (297mm x 420mm); and

7.1.6.1.3 a priced B.O.Q. which refers to a design which will demonstrate the candidate's ability to carry out designs and estimates for substantial projects relating to his field of experience.

### **7.1.7 Candidates in non-Engineering Institutions**

All candidates working in financial institutions must submit a project study in the form of dissertation normally not less than 6000 words.

### 7.1.8 Requirements for Research Candidates

A candidate applying under Research and/or Education Route as per Clause 3.3 of Professional Rules need not submit a separate Engineering Design.

## 7.2 Computer Aided Drawings and Designs

7.2.1 Computer Aided Drawings may be submitted along with sketches and drawings prepared by the candidate. Where Computer Aided Drawings have not been done by the candidate, then sketches prepared by the candidate, which lead to the final drawings, should be attached.

7.2.2 Candidates should be fully conversant with the design theory used and should supplement their submissions with samples of manually computed designs for validation of the computer model given results.

## 8. ORAL EXAMINATION (PROFESSIONAL REVIEW INTERVIEW)

- 8.1 An interview will be conducted by a panel of two Corporate Members, to assess the candidate's suitability for admission as a Corporate Member of the Institution. The interview will be based on compliance with respect to the **five core competences**, using the material (report, design work, log book etc.) submitted by the candidate. (Annex B.1)
- 8.2 During the interview the candidate will be asked to outline the work he has claimed as Responsible Experience and/or aspects of the design submitted by him. The candidate's statement will then be discussed with the aim of ascertaining the degree of professional engineering responsibility carried out by him and his personal contribution.
- 8.3 The candidate should demonstrate that the nature of his/her work is such that he/she is required to exercise judgment and is professionally responsible for decisions made and is worthy of being a Corporate Member of the Institution.
- 8.4 The interview will also include a brief discussion of the candidate's professional interests outside his immediate field such as participation in professional and Institution activities.
- 8.5 The assessment will be based on the quality, content and the duration of the candidate's practical training and experience, and the assimilation by the candidate of the requisite knowledge.
- 8.6 The candidate is required to attain a minimum of level 3 in at least three competences and level 2 in the remaining two competences to be successful at the oral examination.
- 8.7 All examinations will be conducted in English.

## **9. WRITTEN EXAMINATION**

### **9.1 Aim and Scope**

- 9.1.1 The aim of the written examination is to ensure that the candidate for Corporate Membership of the IESL has made a close study of the Ethics and Code of Conduct governing Chartered Engineers, responsibilities shouldered by professional engineers as members of the society. He is sensitive to issues taking place in other areas of the society such as political, social, economical, and environmental, and also issues taking place globally. The examination also checks whether he is adequately conversant with the technological, and managerial aspects of his profession.
- 9.1.2 A knowledge of the broad topics covered in the syllabus given in the Annex E.1 should be assimilated both by experience gathered during the performance of one's normal duties, and by wide reading and discussion of current topics. The study should be analytical and critical, based on sound reason and judgment, without blind assumptions. Ideas expressed in the answers to the set questions should be well thought out. Candidates should read newspapers, topical journals, publications and reports intelligently and keep themselves abreast of current affairs and modern developments.
- 9.1.3 The IESL also will make available a set of specific topics which are thought to be areas a modern day engineer must be aware of. A small write-up on each of the topic will be provided by the IESL along with sources of additional reference. A few questions will be asked directly on these subject areas and thus candidates are advised to read and understand areas covered by these topics.
- 9.1.4 The candidate should be able to express themselves clearly, concisely and intelligibly in English.

### **9.2 Composition**

- 9.2.1 Candidate shall be required to sit two (02) written papers, Paper A and Paper B, unless they are exempted there from. These written papers will be as given below.

Paper A - Professional Experience – To test the candidate's ability to express in writing, matters pertaining to his professional experience.

Paper B – Communication skills, ethics and code of conduct and society related topics. – To assess the candidate's ability to communicate his ideas and his awareness of topics based on Engineering Ethics and Code of Conduct governing Engineers, issues taking place in the society locally and globally, issues not directly engineering related but effect engineers as members of the society, developments taking place around us and future trends.

### **9.3 Paper A – Professional Experience**

- 9.3.1 The topics assigned to a particular candidate in Paper A will be based on his own work experience.
- 9.3.2 Questions on Professional Experience will be directed to ascertain the candidate's ability to express in writing the level of responsibility shouldered and how the candidate has benefited

from experience by way of originality of thought and judgment in taking engineering decisions and the solution of day-to-day problems, faced by him.

9.3.3 The essays should follow an ordered structure displaying and awareness of the importance of division into suitable paragraphs. Rough work (if any) may be embodied in the answers but should be struck out when completed.

9.3.4 Written Paper A would be of 1 ½ hours duration. (A candidate is expected to write about 1,000 words in Paper A). During this time candidates are expected to answer one of the questions set. Candidates will be judged and marked on the following criteria.

9.3.4.1	knowledge of the subject	}	75%
9.3.4.2	relevance of the candidate's answer,		
9.3.4.3	clarity of argument		
9.3.4.4	grammar, syntax and expression		25%

9.3.5 The pass mark will be 50%

#### **9.4 Paper B – Communication Skills, Code of Conduct and awareness of events taking place in the Society**

9.4.1 Written Paper B would be of 03 hours duration and will consist of two Sections. Section I will be on Engineering Ethics and Code of Conduct whilst Section II will be on topics based on issues taking place in society, both local and foreign, and in other spheres other than engineering that has direct impact on the society.

Out of the questions in Section II, half of the questions will be on topics of general nature where specific knowledge about the area subjected to the question is not necessarily required to answer them. Candidates are usually asked to analyse, express opinions, comment, giving views, elaborate etc. on certain issues taking place in the society. A candidate who is generally sensitive to what is taking place around him and who can form his opinion about them should be able to answer these questions without difficulty.

The other half of questions (about 04) will be based on specific pre-identified areas, the list of which will be revised and published by the IESL periodically and sufficiently in advance. Candidates can read and gather information about these areas either by reading the write-ups provided by the Institution on them or by self study.

Candidates can select any mix of questions irrespective of the type in Section II.

9.4.2 The pass mark for this paper will also be 50%.

9.4.3 The syllabus for written Paper B is given in Annex E.

9.4.4 An engineer who has become an Associate Member of the Institution will be permitted to sit the Paper 'B' two years after becoming an Associate Member.

## **9.5 Exemption**

### **9.5.1 Exemption from Professional Review Written Examination “B” Paper (Special Route)**

Candidates having a minimum of twelve (12) years since obtaining Associate Membership of the Institution made up of two (2) years Recognized Training and ten (10) years Responsible Experience will be considered exempt from the Professional Review Written Examination ‘B’ Paper through a special route. They should meet the following requirements.

#### 9.5.1.1 New Applicants;

- a) A design has to be submitted and accepted by a Panel consisting of two Chartered Engineers.
- b) Submission within 2 months of having being informed that the design has been accepted a detailed experience report incorporating engineering applications, between 2500-3000 words applicable to the relevant positions held by the candidate and complying with requirements given in Section 6.0.
- c) Subject to the acceptance of this report the Candidate would have to present himself for an interview before a professional panel of two Chartered Engineers to assess the suitability of the Candidate’s admission as a Corporate Member. He shall be also tested on the subject matters of the B paper, which he is exempted from.
- d) The candidate will be required to sit for A Paper as described in 9.2.
- e) Engineering Research and/or Education Route candidates need not submit a design.

#### 9.5.1.2 Candidates who have unsuccessfully sat the PR on the normal Route in earlier Occasions;

- a) If failed in previous attempts, the design/report to be submitted as in 9.5.1.1.a)
- b) Submit a detailed updated experience report spanning the period from the last experience report submitted to the present period of between 2000-2500 words applicable to the relevant positions held by the candidate and complying with requirements given in section 6.0.
- c) Face an interview before a professional panel of two Chartered Engineers to assess the suitability of the Candidate’s admission as a Corporate Member.
- d) The panel may require the candidate to sit for Paper A as detailed in 9.2.1, even if this has been passed on a previous occasion.

### **9.5.2 Exemption from Professional Review Written Examination “B” Paper(Credits Route)**

#### 9.5.2.1 Candidates who participate in the learned activities of the Institution such as;

##### 9.5.2.1.1 Attending lectures, conferences, courses, workshops, etc.

9.5.2.1.2 Present papers and articles in the IESL Journal, Newsletter or present papers at learned seminars, conferences, etc. organized by the IESL or any professional Institution recognized by the IESL.

9.5.2.1.3 Serve on IESL Standing, Sectional or ad-hoc Committees,

will accumulate Credits, where a total of twelve (12) Credits will qualify the candidate for exemption from the Professional Review Written Examination "B" Paper.

9.5.2.2 Details of the Professional Credit Plan are given in Annex F.

## 10. CONTINUING PROFESSIONAL DEVELOPMENT [CPD]

- 10.1 Continuing Professional Development (CPD) is the systematic improvement and broadening of knowledge and skill and the development of personal qualities necessary for the execution of professional and technical duties throughout the engineer's working life.
- 10.2 CPD may be achieved by attending or undertaking:
- i courses, seminars, workshops and technical meetings organized by the IESL, universities, other professional bodies and course providers;
  - ii conferences and the IESL Annual Sessions;
  - iii Post - Graduate study courses from recognised Universities;
  - iv research and post qualification studies;
  - v technical authorship or preparation of lectures for an organized event; and.
  - vi lecturing for those not normally employed as lectures.
- 10.3 It is recommended that every Associate Member maintains a CPD Record and lists each activity, its duration and date. The aim is to achieve **thirty six (36) hours CPD a year**.
- 10.4 Events qualifying for CPD are normally related to the candidate's branch of engineering but events undertaken to broad-base engineering knowledge or improve managerial ability may also qualify.
- 10.5 CPD courses and lectures conducted by the Institution, together with those conducted by the IESL Provincial Centers can be considered, as will be participation in the Technical Sessions of the Annual Sessions. In addition, educational programmers conducted by other Professional Institutions, and in-house courses run by employers for the benefit of their own staff could be considered.
- 10.6 An authenticated record of CPD done during the past two years must be submitted with the documentation required for the Professional Review.
- 10.7 CPD must be continued throughout the engineer's career, be it the Professional Engineer, Chartered Engineer or Associate Member.

## **11. METHOD OF APPLICATION and RESULTS**

### **11.1 Dates of Professional Review Examination**

The examination will be held in Colombo twice yearly, normally in the months of February/March and the months of August/September. A candidate will be informed of the dates of the examination about a fortnight in advance. Paper A will follow immediately after, or shortly after the oral examination. Paper B will be held on a date close to the date of the Paper A, before or after it.

### **11.2 Application Form and Closing Dates**

11.2.1 An application must be made on Form “E”, with the appropriate fees. The applications may be either sent by registered post or delivered by hand.

11.2.2 Application will be received from candidates who are Associate Members of the Institution by 15<sup>th</sup> December for the February/March Review, or 15<sup>th</sup> June for the August/September Review.

11.2.3 If acknowledgement is not received by 31<sup>st</sup> January for the February/March Review or 31<sup>st</sup> July for the August/September Review, candidates should inform the Secretariat without delay.

### **11.3 Documents to be submitted along with the Application**

11.3.1 All documents as stipulated in the application form should be sent along with the application. Originals, as well as certified photostat copies, of such documents must be submitted. **The Log Book and record of CPD must be submitted together with the Training & Experience Report.**

11.3.2 Documents required to be submitted are shown in Annex G.

### **11.4 Dates for Submission of other Supporting Documents**

11.4.1 The closing dates for the submission of other documents and relevant certificates, in support of an application are 15<sup>th</sup> January for the February/March Review, and 15<sup>th</sup> July for the August / September Review, respectively. These documents and certificates must be sent by registered post or delivered by hand. They must be sent in a separate parcel, folded and securely packed. The parcel should be marked at the top left hand corner “Professional Review Documents”. Each sheet of drawing and every document must bear the candidate’s name and must be fully described on Form IE (P).

### **11.5 Fees for Professional Review**

11.5.1 An examination fee as decided from time to time by the Council will be levied.

## **11.6 Results of the Professional Review**

- 11.6.1 Each candidate will normally be notified of the results of the Professional Review within two months of the interview.
- 11.6.2 The performance at the Oral Examination (including documents where applicable), Written Paper 'A' and Written Paper 'B' will be judged separately and independently, and a Candidate could pass in any one of these three items at a time.
- 11.6.3 The overall achievement of a candidate will be entered in Form IESL PR.1a (Annex H) by the Panel of Examiners, who will also comment as per Notes 1 and 2.
- 11.6.4 Where a candidate fails the examination, a letter will be sent indicating his deficiencies, and advising him how to make good such deficiencies. There is no limit to the number of attempts a candidate may have for the Professional Review.

## **11.7 Appeal**

Candidates may appeal against their results. The Appeal should be in writing and received by the Executive Secretary within 14 days of the results being posted on the IESL Notice Board.

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## ANNEX A

### A. Recognized Training Requirements for the various disciplines

All candidates are required to undergo a training for a minimum period of 24 months. The training requirements for different engineering disciplines are given below. The exceptions to these will be as provided for in 5.5.

#### A.1 Agricultural and Plantation Engineering

A.1.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.1.1.1 A minimum period of 24 months of training which should be made up as follows:

A.1.1.1.1 at least 6 months in an engineering workshop or factory giving the candidate adequate experience in the principal engineering processes such as foundry practice, smithy, machining, welding, fitting, fabrication, heat treatment and wood work, electrical and electronic practice;

A.1.1.1.2 at least 9 months field training on a farm or agricultural station giving the candidate adequate experience in farming operations and cropping programmes both in annual as well as perennial crops, farming, animal husbandry, water management and irrigation practice, farm layout and management; and

A.1.1.1.3 not less than 6 months training in either:

The design, construction and manufacture, installation, testing or maintenance of agricultural and/or plantation machinery including product processing machinery and the operation and maintenance of both field machinery as well as crop processing machinery on a tea/rubber/coconut or sugar plantation or arable farming estate/station, or food processing plant.

or

The design, installation, operation and maintenance of irrigation systems on farms/plantations including gravity, sprinkler and drip irrigation. The management of on-farm irrigation practice involving the use of soil moisture, soil type, crop and weather considerations and systems of soil and water conservation. The practice of land use and land conservation.

or

The design, construction operation, maintenance and environment control of farm structures such as silos, ventilated stores, animal housing, crop processing structures, crop dryers, crop preservation, transport and packing systems, for both perishable as well as non-perishable agricultural products; and

A.1.1.1.4 the balance period to make up an aggregate of 24 months in either A.1.1.1.1 or A.1.1.1.3 above.

## A.2 Building Services Engineering.

A.2.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.2.1.1 A minimum of 18 months training in aggregate in any three (3) of the following major fields:

Heating, lighting, refrigeration, acoustics, air-conditioning, ventilation, water, plumbing, power systems, vertical transport, control systems, fire and security, alarm systems, façade engineering, public health, integrated system, intelligent building.

A.2.1.2 The training may be in areas of planning, design and development, estimating, construction, manufacture, installation, commissioning, Inspection and testing, operation and maintenance.

Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

A.2.1.3 In addition, a minimum of 6 months training which should be continuous, engaged in design work, and doing a design and drawing under the direct supervision of a Corporate Member, to be submitted for the Professional Review.

A.2.1.4 Those who are unable to satisfy the requirement laid down in A.2.1.3 above may complete a comprehensive design project under a Chartered Engineer approved by the Council, The comprehensive designs project should have the prior approval of a committee set up for this purpose consisting of at least (3) designs engineers.

On completion of the project the candidate should present his designs to the committee for evaluation and he should defend his work before a special panel appointed for the purpose.

## A.3 Chemical Engineering

A.3.1 Applicants practicing in the broad area of **Chemical Engineering** should have after a successful completion a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.3.1.1 a minimum period of 12 months being in at least **two (2)** of the following four process and plant aspects:

Process and Plant Evaluation (technical & economic); Process, Plant and Equipment Design; Process and Plant Construction (materials & methods); and Process and Plant Operation;  
and

- A.3.1.2 a further minimum period of 12 months basic training in the following aspects. Selection of any **four (4)** aspects from the following will bring the total to **six (6)**:

Chemical Engineering Research; Process and Plant development; Quality assessment of process materials; Instrumentation control and computer application; Technical sales marketing and contract negotiations; Economics, Accounting and other management services; Administration & Management and Project Management; and Teaching Chemical Engineering in accredited Degree courses.

- A.3.3 Applicants practicing in the field of **Environmental Engineering** should have their field training as specified below:

- A.3.3.1 A minimum of 24 months recognized training made up of:

- A.3.3.1.1 a minimum of 12 months recognized training in the Environmental Engineering Field, in a relevant industrial organization, academic institute or research organization in preferably more than one of the following areas:

Construction of water or wastewater treatment plant; operation of water or wastewater treatment plant; construction or operation of air pollution control systems; construction or operation of solid waste management systems; environmental pollution control programs such as soil remediation, lake or river restoration, sanitation; environmental monitoring programs or energy management programs; environmental impact assessments and strategic environmental assessments; Waste minimization and cleaner production programs in Industries; Sites where sustainable construction methods are practiced predominantly, such as those aimed at LEED certification.

- A.3.3.1.2 a minimum of additional 12 months training, engaged in one or more of the following areas:

Design work of any of the systems mentioned above, and doing a design and drawing under the direct supervision of a Corporate Member

Full time or part-time research work, resulting in a Project Report or a Thesis, under the direct supervision of a Corporate Member to be submitted for the Professional Review.

## **A.4 Civil Engineering**

- A.4.1 Applicants practicing in the broad area of **Civil Engineering** should have after successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

- A.4.1.1 a minimum of 24 months of training of which a minimum of 12 months recognized training in Civil Engineering construction, in as many Civil Engineering branches as possible of which at least 6 months should be continuous; and

- A.4.1.2 a minimum of 6 months training which should be continuous, engaged in designs work, and doing a design and drawing under the direct supervision of a Corporate Member, to be submitted for the Professional Review.

- A.4.1.3 Those who are unable to satisfy the requirement laid down in A.4.1.2 above may complete a comprehensive design project under a Chartered Engineer approved by the Council. The comprehensive design project should have the prior approval of a Designs Engineer appointed for this purpose. A Chartered Engineer can at any one time supervise a maximum of only 4 candidates.

On completion of the project the candidate should present his design for the Professional Review to be assessed by a three member panel which will have two Designs Engineers.

- A.4.2 Applicants practicing in the field of **Geotechnical Engineering** will be required to satisfy the requirement for Civil Engineering as specified in Section A.4.1.

The field training will be as specified below;

- (i) Geotechnical Investigations; embankment construction and associated operations; foundation excavation and improvement / treatment; material testing/quality control; excavation and stabilization of slopes (rock/soil); or
- (ii) Construction of underground chambers; tunneling in rock and /or soil with associated operations such as excavation, drilling and blasting, mucking operations, lighting, ventilation, de watering etc; stabilization of tunnel walls, doweling, rock bolting, shotcreting, grouting, concrete lining, steel lining, etc.; or
- (iii) Geotechnical Investigations; material testing; Engineering aspects of landslides including investigations, monitoring, counter measures for controlling and stabilization of slopes; earth retaining structures.

Note : In (i), (ii) and (iii) above, engagement in all the areas will not be required, but a broad training not restricted to a narrow field is required.

- A.4.3 Applicants practicing in the field of **Environmental Engineering** should have their field training as specified below:

- A.4.3.1 A minimum of 24 months recognized training made up of:

- A.4.3.1.1 a minimum of 12 months recognized training in the Environmental Engineering Field, in a relevant industrial organization, academic institute or research organization in preferably more than one of the following areas:

Construction of water or wastewater treatment plant; operation of water or wastewater treatment plant; construction or operation of air pollution control systems; construction or operation of solid waste management systems; environmental pollution control programs such as soil remediation, lake or river restoration, sanitation; environmental monitoring programs or energy management programs; environmental impact assessments and strategic environmental assessments; waste minimization and cleaner production programs in industries; sites where sustainable construction methods are practiced predominantly, such as those aimed at LEED certification.

- A.4.3.1.2 a minimum of additional 12 months training, engaged in one or more of the following areas:

Design work of any of the systems mentioned above, and doing a design and drawing under the direct supervision of a Corporate Member

Full time or part-time research work, resulting in a Project Report or a Thesis, under the direct supervision of a Corporate Member to be submitted for the Professional Review.

## **A.5 Computer Engineering and IT**

- A.5.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

- A.5.1.1 A minimum of 24 months recognized training in aggregate in one or more of the following major fields:

Software engineering, computer science, information systems, multimedia, software architecture, systems software, computer systems, computer architecture, networks, IT security, electronic systems, and any others that may be included from time to time by the Council.

- A.5.1.2 The training may be in areas of planning, design & development, prototyping, industrial systems, system integration, networking, manufacture, installation, commissioning, inspection & testing, operation and maintenance, type approvals, etc. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

Considering the rapidly changing nature of Computer Engineering and IT, an applicant should demonstrate knowledge and awareness of current techniques and technologies (within 3-5 years prior to the date of application) in the chosen major field of training.

- A.5.1.3 They should within this training period, have a minimum of three months training in the use of hardware and software tools, testing and measuring instruments (hardware and/or software), provided they have not had such training prior to graduation.

## **A.6 Electrical, Electronic and Telecommunication Engineering**

- A.6.1 Applicants practicing in the field of **Electrical Engineering** should have after successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

- A.6.1.1 a minimum of 24 months training in aggregate in one or more of the following major fields:

Electrical power systems, electrical machines, control systems, power electronics and automation systems, and any others that may be included from time to time by the Council.

A.6.1.2 The training may be in areas of planning, design and development, estimating, construction, manufacture, installation, commissioning, inspection and testing, operation and maintenance. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

A.6.1.3 They should, within this period, also have 3 months of training in the use of basic hand tools and machine tools in a workshop if they have not had such training prior to graduation.

A.6.2 Applicants practicing in the field of **Electronic Engineering** should have after successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.6.2.2 A minimum of 24 months training in aggregate in one or more of the following major fields:

Electronic devices and circuits, semiconductors, electronic systems, control systems, power electronics, communications, and any others that may be included from time to time by the Council.

A.6.2.3 The training may be in areas of planning, design and development, estimating, construction, manufacture, installation, commissioning, inspection and testing, operation and maintenance. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

Considering the rapidly changing nature of Electronic Engineering, an applicant should demonstrate knowledge and awareness of current techniques and technologies (within 3-5 years prior to the date of application) in the chosen major field of training.

A.6.2.4 They should within this training period, have a minimum of three months training in the use of electronic workshop tools, testing and measuring instruments in a workshop, provided they have not had such training prior to graduation.

A.6.3 Applicants practicing in the field of **Telecommunication Engineering** should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.6.3.1 A minimum of 24 months recognized training in aggregate in one or more of the following major fields:

Telecommunication transmission and switching, networks, electronics, network analysis, instrumentation, control systems, value added services, service delivery, and any others that may be included from time to time by the Council.

A.6.3.2 The training may be in areas of planning, design & development, prototyping, industrial systems, system integration, networking, manufacture, installation, commissioning, inspection & testing, operation and maintenance, type approvals, etc. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

Considering the rapidly changing nature of Telecommunications Engineering, an applicant should demonstrate knowledge and awareness of current techniques and technologies (within 3-5 years prior to the date of application) in the chosen major field of training.

A.6.3.3 They should within this training period, have a minimum of three months training in the use of electronic workshop tools, testing and measuring instruments in a workshop, provided they have not had such training prior to graduation.

## **A.7 Marine Engineering**

A.7.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.7.1.1 A minimum of 24 months recognized training in aggregate in one or more of the following sectors/areas:

Ship repair and construction in on-shore, off-shore or sub-sea marine engineering fields,  
Design and/or construction of ships, crafts, marine vessels and structures,  
Service on-board sea going ships, vessels and crafts,  
and any other that may be included from time to time by the Council.

A.7.1.2 The training may be include operation and maintenance, planning, design & development, estimating, construction, manufacture, installation, commissioning, inspection & testing, and marine/ship surveys in above sectors/areas. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

## **A.8 Materials and Metallurgical Engineering**

A.8.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.8.1.1 a minimum of 12 months training in one or more areas in the following major fields:

Metallurgy - Foundry practice, metal forming, fabrication, welding, heat treatment and surface treatment;

Ceramics - Ceramic processing, manufacturing methods, operation and maintenance of machinery;  
Polymers - Polymer processing, manufacturing methods, operation and maintenance of machinery; and

A.8.1.2 the balance 12 months training may be in areas of planning, design and development, selection of materials, testing, quality control, measurements and inspection techniques and failure analysis in one of the major fields. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

A.8.1.3 Materials/Metallurgical Engineers should submit a thesis on problems related to or encountered by those industries. The thesis should have been approved by two referees.

## **A.9 Mechanical Engineering**

A.9.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.9.1.1 A minimum of 24 months recognized training made up of:

A.9.1.1.1 at least 6 months in an approved Mechanical Engineering workshop, giving the candidate adequate exposure to the applications of Mechanical Engineering through a combination of:

Engineering Materials – types & properties; Material Forming – ferrous & non-ferrous foundry practice, machining, milling, extruding, etc.; Fitting; Materials Joining – welding, fastening, adhesives, etc.; Design & Manufacture; Installation & Commissioning; Control Systems; Electrical & Electronic applications; Measurement & Inspection techniques; Computer Applications; and

A.9.1.1.2 at least 18 months in Company Specific Training, which will extend the general training received in A 9.1.1.1 and help in focusing towards the special needs of the employing organization in order that candidate plays an effective part in that business. This module with Mechanical Engineering overtones will expose the candidate to:

Process Engineering; Production Management; Maintenance Management; Energy Management; Project Management; CAD / CAM applications; Advanced Metrology & NDT techniques; Financial & Commercial appreciation; Personnel & Human Resources issues; and Health, Safety and Environmental needs.

## **A.10 Manufacturing Engineering**

A.10.1 Applicants should have after a successful completion of a recognized Engineering Degree or the IESL examinations in full or equivalent:

A.10.1.1 A minimum of 24 months recognized training in aggregate in one or more of the following major field in a manufacturing environment:

Machining, Metal Forming, Foundry, Welding, Fitting, Fabrication, Heat Treatment, Surface Treatment and any other that may be included from time to time by the Council.

A.10.1.2 The training may be in areas of Planning, Design & Development, Estimating, Construction, Manufacture, Installation, Commissioning, Inspection & Testing, Operation and Maintenance. Engagement in all the above areas will not be required, but a broad training not restricted to a narrow field is required.

A.10.1.3 They should within this training period, have a minimum of three months training in the use of basic hand tools and machine tools in a workshop, provided they have not had such training prior to graduation.

## **A.11 Mining Engineering and Earth Resources Engineering**

A.11.1 Applicants practicing in the field of **Mining Engineering** should have after a successful completion of the IESL examinations in full or a recognized Engineering Degree or equivalent:

A.11.1.1 a minimum period of 24 months of training of which at least 12 months should be continuous practical training in one of the following branches:

- (i) Mining operations where tunneling, shaft sinking, raising, winzing, stopping and securing of ground are practiced; or
- (ii) Mineral processing where crushing, grinding, screening, floatation, gravity separation, etc. are practiced; or
- (iii) Quarrying where bench drilling, bench blasting, muck loading, crushing and grinding are practiced; or
- (iv) Oil well drilling and associated work, exploration drilling, production drilling and drilling for water.

Note: In (i), (ii), (iii) and (iv) above, engagement in all the areas will not be required, but a broad training not restricted to a narrow field is required.

A.11.2 Applicants practicing in the field of **Earth Resources Engineering** should have a minimum period of 24 months of training of which at least 12 months should be continuous practical training in one of the following branches:

- (i) Operations where geophysical methods, geochemical methods, drilling, etc. are practiced for mineral exploration, ore/ mineral reserve estimation, extraction of ore/mineral resources, etc.; or
- (ii) Operations in the ocean/ ocean floor where sampling, drilling, scanning, etc. are practiced to explore for resources, estimate resource reserves, extract resources, etc.; or

- (iii) Use of remote sensing techniques and associated field and other techniques for operations to explore for resources, estimate reserves, monitor resource reserves, document data in appropriate instruments, etc.; or
- (iv) Use of remote sensing techniques and associated field and other techniques in hazard/ disaster situations for operations to investigate and monitor hazard/disaster, plan and implement disaster mitigation/ remedial measures

Note: In (i), (ii), (iii) and (iv) above, engagement in all the areas will not be required, but a broad training not restricted to a narrow field is required.

## **A.12 Textile Engineering**

A.12.1 Applicant should have after successful completion of an approved course for an Engineering Degree or equivalent:

A.12.1.1 A minimum of 24 months training in a relevant industrial organization, academic institute or research organization to achieve recognized work related experience as follows:

A.12.1.1.1 at least 12 months period of training in a relevant industrial organization, academic institute or research organization in the areas of:

Production, distribution, dyeing and finishing of any man made fibre type; drawing, preparation, spinning of natural fibres; production of textile films; production, distribution, dyeing and finishing of yarns and threads; production, treatment, dyeing and finishing of textile fabrics, woven, knitted and non-woven; textile fabric, yarn or thread dyeing and finishing; cords and braids; and technical Textiles including medical, composites and structure.

A.12.1.1.2 At least 12 months period of training in a relevant industrial organization, academic institute or research organization in the areas of:

Process design/development; production planning and control; capacity planning; scheduling and loading of the production line; work place engineering; time and work study engineering; Computer Aided Design(CAD); and garment dyeing and washing

## ANNEX B

### **B Competence Based Assessment for IESL Professional Review**

Registration and recognition as a Chartered Engineer is open to any engineer who can demonstrate competence to perform professional work to the necessary standards, and commitment to:

- Maintains that competence
- Work within professional codes
- Participate actively within the profession

Competence includes the knowledge, understanding and skills that underpin performance. Engineers become competent through a mixture of education and professional development.

In keeping with international advancements in the recognition and registration of engineering professionals, the IESL proposes to introduce a competence-based assessment, as a part of the existing Professional Review, for engineers seeking registration as Chartered Engineers. The present PR consists of the Interview, Paper 'A' and Paper 'B'. The competence-based assessment will be an integral part of the Interview.

The IESL competence-based assessment will focus on five core competences namely,

- Knowledge and understanding of engineering principles
- Practical application of engineering knowledge
- Leadership and management
- Communication and interpersonal skills
- Professional conduct

These competences will be the backbone of the Interview and the assessment panel will be required to assess for each of the five generic competences, how the candidate measures up to the competence level expected of a Chartered Engineers. The five generic competences and their key elements are given below:

#### **1.0 Understand and apply a combination of specialist and general engineering knowledge as the foundation to good practice in engineering**

- Maintain a sound theoretical approach to technology
- Identify, comprehend and apply appropriate engineering knowledge
- Introduce / exploit emerging technologies
- Promote innovation and technology transfer

## **2.0 Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems**

- Identify, define, investigate and analyse complex engineering problems
- Participate in or specify research, design and/or development
- Plan and implement solutions
- Evaluate solutions
- Identify what has been learnt from the activity
- 

## **3.0 Provide technical, commercial and managerial leadership**

- Experience of effective project planning
- Manage and plan budgets, task, people and/or other resources
- Develop the capability of staff to meet current technical and managerial needs
- Bring about continuous improvement through quality management

## **4.0 Use effective communication and interpersonal skills**

- Effective use of oral and written communication skills
- Ability to present and discuss ideas and plans
- Ability in team building and negotiating activities
- Treats people with respect

## **5.0 Professional Conduct**

- Conduct engineering activities to an ethical standard as laid down in the relevant standard
- Application/management of safe systems of work
- Familiar with relevant legislation in respect of safety, health and the environment
- Engage in CPD to ensure competence in areas of future intended practice
- Demonstrates involvement with IESL and local community activities

The candidate for the PR should highlight these competences in the Report on Recognized Training and Responsible Experience he/she will submit. It should be noted that there is nothing new in these requirements as Section 6 of the Rules for the Professional Review – 8<sup>th</sup> Edition clearly state that the main objective of the Report is to demonstrate that the candidate has achieved the degree of professional competence required of a Corporate Member of the IESL and has exercised responsibility at the required level, as indicate in Section 6.2.3 and 6.3.3. Also the design/project undertaken by the Candidate will indicate his compliance with the first two competences.

The interview panel while seeing how the Report shows the expected competences, will use the interview to further satisfy themselves that the candidate meets the required competence levels. In the Assessment form they will comment on how the candidate matches-up to the required competences and would award an appropriate grade. A copy of the Assessment form is GIVEN IN ANNEX B.1 and this will be used in conjunction with the present PR assessment form IESL PR/1(a). This new format will help the interview panel to carry out a more focused and better structured interview and will also help towards maintaining a consistent level of the interview.

**ANNEX B.1**

**FORM IESL PR 1a**

**INTERVIEW ASSESSMENT FOR THE CHARTERED ENGINEER**

**Professional Review Feb/Mar / Aug/Sep .....**

**Applicant :** .....

**Assessor :** .....

**Date :** .....

*Please use competence indicators 1-4 as indicated:*

The Assessor should grade each section using the following competence level.

- Level 1 – performs activity with significant supervision; little or no individual responsibility
- Level 2 - performs activity in a range of situations; supervision required in more complex situations; some individual responsibility or autonomy.
- Level 3 - performs activity in some complex and non-routine situations; significant responsibility or autonomy; can oversee the work of others
- Level 4 - performs activity in a wide range of complex and non-routine situations; significant individual responsibility or autonomy; can involve others in the activity.

**1.0 Demonstrates knowledge and understanding of engineering principles**

<b>Key elements of competence</b>	<b>Examples of meeting competence 1.0</b>
<ul style="list-style-type: none"> <li>• Maintain a sound theoretical approach to technology</li> <li>• Identify, comprehend and apply appropriate engineering knowledge</li> <li>• Introduction / exploitation of new technologies</li> <li>• Promote innovation and advances in technology</li> </ul>	

Additional comments : .....  
 .....  
 .....

Competence level for Section 1.0

Applicant : .....

**2.0 Demonstrates practical application of engineering knowledge and expertise**

Key elements of competence	Examples of meeting competence 2.0
<ul style="list-style-type: none"> <li>• Identifies, defines, investigates, analyses complex engineering problems</li> <li>• Participates in or specifies research, design and developments</li> <li>• Plans and implements solutions</li> <li>• Makes reliable predictions of outcomes</li> <li>• Exercises sound professional engineering judgement</li> <li>• Identifies what has been learnt from the activity</li> </ul>	

Additional comments : .....  
 .....  
 .....

Competence level for Section 2.0

**3.0 Leadership and Management**

Key elements of competence	Examples of meeting competence 3.0
<ul style="list-style-type: none"> <li>• Management of significant engineering works</li> <li>• Responsibility for making decisions</li> <li>• Identifies and assesses engineering risk</li> <li>• Ensures team members have appropriate skills</li> <li>• Contribution to continuous improvement via quality management</li> </ul>	

Additional comments : .....  
 .....  
 .....

Competence level for Section 3.0

**4.0 Communication and inter-personal skills**

Key elements of competence	Examples of meeting competence 4.0
<ul style="list-style-type: none"> <li>• Demonstrates written and oral communication skills</li> <li>• Ability to present and discuss ideas / plans</li> <li>• Treats people with respect</li> <li>• Ability in team building and negotiating activities</li> </ul>	

Additional comments : .....  
 .....  
 .....

Competence level for Section 4.0

**5.0 Professional conduct**

Key elements of competence	Examples of meeting competence 5.0
<ul style="list-style-type: none"> <li>• Compliance with codes and rules of conduct of the profession</li> <li>• Recognise the social, cultural and environmental impact of professional engineering activities</li> <li>• Application / management of safe systems of work</li> <li>• Familiar with relevant legislation in respect of health, safety, risk and the environment</li> <li>• Displays commitment to undertake CPD</li> <li>• Demonstrates involvement with IESL, other professional organizations and local community activities</li> </ul>	

Additional comments : .....  
 .....  
 .....

Competence level for Section 5.0

Assessor's Signature : .....

Assessor's Name : .....

Date : .....

**ANNEX B.2**

THE INSTITUTION OF ENGINEERS, SRI LANKA  
 120/15, Wijerama Mawatha, Colombo - 07

**CONFIDENTIAL**

**FORM : IESL PR/1(a)**

**PROFESSIONAL REVIEW EXAMINATION**

Name of Candidate :  
 Panel Members :

INDEX NO:  
 Date of Interview:

(To be filled by the Panel at the Interview)

(i) **Assessment of Training (Vide Rules 5 and 6) – Duration and Quality**

	<i>Period (Months)</i>	<i>Adequate</i>	<i>Inadequate</i>	<i>Remarks</i>
(a) Recognised Training (Rule 5.2)				
(b) Experience in lieu of Training (Rule 5.8.3)				
(c) Research/Teaching/etc. (Rule 5.4)				
(d) Responsible Experience (Rule 5.3)				
	<i>Satisfactory</i>		<i>Unsatisfactory</i>	
(e) Report (Rule 6)				
(f) Supporting Documents (Rule 5.7) Log Book, Sketches, Photographs ect.				

(ii) **Assessment of Designs / Project : (Vide Rule 7)**

DESIGN :	<i>Pass</i>	<i>Fail</i>	<i>Remarks</i>
(a) Investigation, Designs & Calculations			
(b) Drawings with Details			
(c) BOQ			
PROJECT			

(iii) **Interview (Vide Rule 8)**

	<i>Competence Level</i>
(1) Demonstrates knowledge and understanding of engineering principles	
(2) Demonstrates practical application of engineering knowledge and expertise	
(3) Leadership and Management	
(4) Communication and inter-personal skills	
(5) Professional conduct	

NOTE : To be successful a candidate has to score at least Level 3.0 in three competences and Level 2.0 in the other two competences.

RESULTS : The candidate has **PASSED/FAILED** the Interview.

Signature of Panel Members: 1. .... 2.....

(iv) **Results of Section "A" Paper (Vide Rule 9.3)** *To be filled by the Panel*

.....% Marks. Candidate has **PASSED/FAILED**.

Remarks : .....  
 .....

Signatures of Examiners : 1. .... 2. ....

**NOTES :**

- (To be communicated to the Candidate)  
 In case the candidate has failed, his/her shortcomings should be detailed below so that the candidate can remedy shortcomings. Please specify further submissions and/or experience required referring to items (i) to (iii) above. Also state the specific period after which the candidate should apply for a reconsideration of his/her application.

.....  
 .....  
 .....

2. (For information of the Membership Committee)  
If any Thesis/Report ect. is of sufficient merit, please draw your attention to it below, so that the candidate can be invited to make a contribution to the Journal “Engineer” or Annual Transactions.

.....  
.....  
.....

Signature of Panel Members/Examiners :

Panel Member/Examiner 1. .... Panel Member/Examiner 2. ....

(v) **Results of Section “B” Paper (Vide Rule 9.4)**  
(To be filled by the Secretariat with reference to the marks list given by the Examiners of the “B” Paper)

.....% Marks. Candidate has PASSED/FAILED.

Remarks : .....  
.....

Signature of Executive Secretary : .....

(vi) **Confidential Reports from Proposers**  
and we are satisfied that the candidate is suitable/not suitable for acceptance to the class of Member.

Signature of Panel Member 1. .... Panel Member 2. ....

## ANNEX C

### C Mentoring System

#### C.1 Appointment of Mentors

C.1.1 Mentors could be appointed, with the approval of the IESL in respect of each Student/Associate Member seeking to become a Corporate Member of the IESL.

C.1.2 Mentors will be Corporate Members of the Institution, with a minimum of five (5) years post-Charter experience, or any other Engineering Institution recognized by the IESL.

C.1.3 In organizations having graduate engineers in their employment, the Mentor can be appointed from amongst its staff or outside (as a consultant). A Mentor has to be appointed in respect of each student/AM in the organization. The Mentor should preferably be the immediate supervisor, who should be a Chartered Engineer. However, the concurrence of the IESL must be obtained for such appointment.

- C.1.4 The IESL at the request of a student/associate member can appoint a Mentor from amongst its membership. Where the IESL has been asked to appoint a Mentor by a AM/student, such student may be required to make a payment (annual fee) to the IESL for this service.
- C.1.5 The IESL may place a limit on the number of Students/Associate members any person could be a mentor to. This is with a view to ensuring that the Mentor can meet his obligations towards his mentoree.

## **C.2 Responsibility of a mentor**

- C.2.1 Mentors should acquaint themselves of the training requirements for admission to the class of Members. They should study the training and experience programs of each student/AM member in their charge and advise as to its adequacy. They could in turn advise the organization to amend its proposed plan for training/experience of a candidate, in keeping with the aims and objectives of the organization.
- C.2.2 They should have regular meetings with the student/AM they are expected to mentor, where they counsel the student/AM regarding the requirements of the IESL, test and advise the student/AM about shortcomings in his communication skills, indicate areas where the student/AM should acquire additional skills, etc.
- C.2.3 They should report to the IESL about the student/AM in relation to his training (as against the total proposed), experience ( as against the total proposed), communication skills, knowledge of general engineering (engineer in society), language etc. This may be done on a standard format (B 4), and every six months.
- C.2.4 The Mentor should be one of the proposers or supporters in the application for membership of his mentoree.
- C.2.5 The mentor of a particular candidate should not serve in the PR panel of that candidate

## **C.3 Responsibility of the IESL**

- C.3.1 The IESL will arrange meetings for mentors at regular intervals to
- Appraise the Mentor of the IESL requirements (existing or new)
  - Get feedback in the operation of the mentor scheme
- These meetings will be chaired by senior members of PR panels.
- C.3.2 Maintain records of student/AMs reports submitted by the mentors. Such reports should be made available to the PR panels for their use.
- C.3.3 To consider the performance of candidates as Mentors when evaluating applications to the class of Fellows. Maintain records of candidates including their performance, mentored by the mentor.
- C.3.4 Appoint a Mentor at the request of a student/AM member, from the list of persons who have offered their service as mentors. Monitor the reports and make payments to the mentor in such cases.

**TRAINEE EVALUATION REPORT**

To be submitted by Mentor every six (6) months in respect of the performance of the Mentoree

Name of Trainee : ..... IESL #.....

Address : .....

Employment : .....

Discipline : ..... Age : ..... Gender : Male / Female

Training at : .....

Name of Mentor : ..... IESL #.....

Address : .....

Period of mentoring under review : From ..... To .....

**TRAINING**

**Category** : Induction / General Engineering Training / Directed Objective Training

Please comment on :

1 Mentoree’s performance during the specified training period, emphasizing on practical skills development, appreciation of engineering principals, social responsibility, and general attitude.

.....  
.....  
.....

2 Oral and written communications (English)

.....  
.....

3 Any other relevant points

.....  
.....  
.....

4 Mentoree’s comments with regards to training during specified period

.....  
.....  
.....

.....  
Signature of Mentor

.....  
Date

.....  
Signature of Mentoree

Note - If required please use additional sheet of paper for continuation of comments, taking care to number and sign it.

## ANNEX D

### D Format for Summary of Training vide Rule 6.3.1

#### *FORMAT FOR SUMMARY OF RECOGNIZED TRAINING & RESPONSIBLE EXPERIENCE*

(I) Recognized Training Prior to Graduation (Vide Rule 5.8.1.2)

Place of Work	Inclusive Dates			Position	Under whom	Signature of certifying officer	Total ..... Months
	From	To	Duration (months)				

(ii) Recognized Training After Graduation (Vide Rule 5.2.2)

Place of Work	Inclusive Dates			Position	Under whom	Signature of certifying officer	Total ..... Months
	From	To	Duration (months)				

Breakup of total into Different Types of Training as per ANNEX A.

- (a)
- (b)
- (c)

(iii) Responsible Experience (Vide Rule 5.3)

Total ..... Months

Place of Work	Inclusive Dates			Position	Under whom	Signature of certifying officer
	From	To	Duration (months)			

(iv) Exceptions (Vide Rule 5.8)

Total ..... Months

Months

- (a) Recognized Training – Rule 5.8.1.1 .....
- (b) Responsible Experience – Rule 5.8.2 .....
- (c) Experience in Lieu of Training – Rule 5.8.3 .....
- Total .....

**FORMAT FOR SUMMARY APPLICABLE TO RESEARCH CANDIDATES**  
**Vide Rules 5.3 & 5.4**

Name & Signature  
of Person  
Certifying

- (a) Name of Post Graduate Qualification and of Recognized Institution .....
- (a) Engagement in Research work at time of application and name of Recognized Institution .....
- (b) Period of engagement in engineering, giving name of responsible position held & inclusive dates .....
- (c) Approved course of full time post graduate study followed, with inclusive dates and duration. ....
- (d) Duration of post graduate research degree, with inclusive dates .....

(e) Duration of research carried out whilst holding post of teacher .....  
in an approved degree course, giving inclusive dates.

(f) Duration in a Recognized Research Institution with inclusive dates. ....

(g) Practical Experience if any: total duration in years with inclusive dates .....

No. of Years engaged in:

(i) Investigation .....

(ii) Planning .....

(III) Design .....

(iv) Construction .....

## ANNEX E

### E Syllabi for Paper B (Vide Rule 9.4) :-

1. Communication skills - The art of communicating clearly, concisely and intelligibly in English. The art of structuring an answer. The beginning, the body and the conclusion, presentation and the flow, transition from one point to another, proper use of paragraphs, writing grammatically correct English, spellings, writing answers to the point etc.
2. Ethics and Code of Conduct. (Refer IESL publications on the subject).
3. Issues effecting the Society – Social, Economic Political factors, Gender Issues, behavioural sciences, National Development, Industry, Commerce, Role and responsibility of engineers as a member of the society and as a professional, public perception of engineers, strengths , opportunities and threats to the profession, role of the civil society, environmental issues, emerging technologies, International affairs, Governments national policy and Sri Lankan economy, major infrastructure projects taking place and planned for future etc.
4. Also refer the list of specific topics published by IESL from time to time on which few questions will be directly based upon.

(Candidates are encouraged to read National papers, the IESL Newsletter (Sri Lanka Engineering News), Central Bank Reports and watch television programmes on business and finance.) A list of books recommended for reading could be obtained from the Secretariat on application.

## ANNEX E I - SAMPLE TOPICS

	<b>Main Topic</b>	<b>Sub classifications (Sample)</b>
1	Environment	<ul style="list-style-type: none"> <li>• Green House gas emission &amp; Global warming</li> <li>• Concept of Carbon Trading</li> <li>• CFC gas emissions &amp; ozone layer depletion,</li> <li>• Montreal Protocol and Kyoto protocol for environmental Protection. Refusal by some countries for complying with these Protocols</li> <li>• Concept of Sustainable Development</li> <li>• Urbanization/Solid Waste generation</li> <li>• Industrialization/ Harmful effluent generation</li> <li>• Role of Local Authorities in solid waste management/harmful effluent management,</li> <li>• Cleaner production</li> <li>• 3R concept/Energy Audits.</li> <li>• Natural Resources Scarcity/Management</li> <li>• Over exploitation of hill country against high environmental sensitivity</li> <li>• Potential for the development of north, east and the southeast</li> <li>• Sri Lanka: Maritime boundaries, Exclusive Economic Zone, Resources within the territorial waters</li> <li>• Ancient Heritage Vandalism/Preservation</li> </ul>
2	National Policy and SL economy.	<ul style="list-style-type: none"> <li>• Forms of Government/Concept of good governance. Is it a myth?</li> <li>• Government economic policy,</li> <li>• Fiscal policy.</li> <li>• What is growth and development of an economy</li> <li>• Balance of Payment/Inflation,</li> <li>• Education, Employment, Unemployment</li> <li>• Social Harmony, Peace initiatives, War and terrorism</li> <li>• Major constraint in resolution/Haegamony by developed countries</li> <li>• Major Infrastructure development projects in the pipeline ,their objectives, justification and associated constraints</li> <li>• Constitution, Government Structure and proposed Electoral reforms.</li> <li>• Bribery and Corruption, the worst enemy?</li> </ul>
3	Emerging Technologies	<ul style="list-style-type: none"> <li>• NANO technology and its applications,</li> <li>• Biotechnology and its applications,</li> <li>• Intelligent Transport, Fuel cells, Hybrids</li> <li>• Artificial intelligence,</li> <li>• Robotics,</li> <li>• Potential of Genetic engineering. Is it a double edged weapon?</li> </ul>

4	International affairs	<ul style="list-style-type: none"> <li>• Role of the UN, UN Charter</li> <li>• Super powers , neo colonialism, third world</li> <li>• Main International conflict zones and there effects to SL &amp; other countries.</li> <li>• Globalization, world trade,, Role of multinational companies, International Patents, Surreptitious Protectionisms by developed world, GATT, WTO, who benefits and how?</li> <li>• Regional trade agreements; SAPTA, SAFTA, who benefits and how?,</li> <li>• Threats to the survival of Planet earth and its inhabitants.</li> <li>• Disarmament and Nuclear non proliferation, judical use of limited resources.,</li> <li>• Human right issues, (freedom of expression, political freedom etc). Hegemonic applications by developed world</li> <li>• Method of collective bargaining, Role of Trade/Student Unions, Misuses of this avenue for ulterior motives</li> </ul>
5	Quality management systems.	<ul style="list-style-type: none"> <li>• ISO, SLS, HACCP, GMP.TQM,5S</li> </ul>
6	Engineering profession	<ul style="list-style-type: none"> <li>• Gaining Professional/legal status for the practising Engineers, Professional Charter, Registration of Engineers</li> <li>• Membership of Washington Accord Countries, Accreditation of Engineering Courses,</li> </ul>
7	Behavioural and Social sciences	<ul style="list-style-type: none"> <li>• Leadership,</li> <li>• Motivation,</li> <li>• Decision making,</li> <li>• Conflict resolution,</li> <li>• Negotiation,</li> <li>• Contract Law,</li> <li>• Consultation , Consensus, Compromise</li> <li>• Alternative dispute resolution procedures (arbitration and adjudication.)</li> <li>• Gender issues/Equal opportunities</li> <li>• Moral Conduct/Professional Integrity</li> </ul>

## ANNEX F

### F. Professional Credit Plan for exemptions from 'B' Paper (Vide Rule 9.5.2):-

To get exemption candidates have to obtain a minimum of 12 credits from the Credit Plan at the time of submitting his/her application for the Professional Review.

Details are as follows :

Category	Activity	Credits
1. Learned	1.1 Attended public lectures/seminars / congresses / conferences / workshops / courses organized by the IESL	
	1.1.1 Public Lectures	0.20 per lecture
	1.1.2 Conferences / congresses/workshops/ Seminars	
	½ - 1 day	0.25 per programme
	1½ - 2 days	0.50 per programme
	3 – 5 days	0.75 per programme
	6 or more days	1.00 per programme
	1.1.3 Courses	
	½ - 1 day	0.50 per course
	1½ - 2 days	0.75 per course
	3 – 5 days	1.00 per course
	6 or more days	1.50 per course
	2. Presented	2.1 Published papers in IESL or other publications
2.1.1 Papers in the IESL Journal, Proceedings of the Annual Sessions (Transactions) or any other publication (International/Local) acceptable to IESL		1-3 credits per paper
2.1.2 Paper/Report/News item in the IESL Newsletter		½ -1 credit per item
2.2 Presented a paper at IESL organized Seminars/Workshops/Conferences or any Professional Institutions/Organizations acceptable to IESL for this purpose.		1-2 credits per paper -

3. Served	3.1 Served in IESL Sectional Committees/ Sub-Committees/adhoc committees etc.	
	As a Chairperson (A minimum of 75% Attendance is required)	3 per year (or duration of the committee)
	As a Member (A minimum of 75% Attendance is required)	2 per year (or duration of the committee)

- NOTES :
- i. Documentation must be submitted to verify all claimed credits
  - ii. The maximum credits that can be accrued in each category is six (06).
  - iii. The credit plan is acceptable to the activities jointly organized by the IESL with other organizations or by other Institutions acceptable to IESL.
  - iv. Co-authors or Co-presenters will be entitled to an equal share of credits subject to a minimum of one credit.
  - v. This is applicable after becoming an Associate Member.
  - vi. In 2, the maximum credits to be 3, if the activities are non-IESL.

## ANNEX G

### Documents to be Submitted with Application. (Vide Rule 11.3.2)

- G.1 Four (4) copies of the Report on Recognized Training and Responsible Experience (Vide Rule 6)
- G.2 Four (4) copies of the Summary of Recognized Training and Responsible Experience (Vide Rule 6.3.1)
- G.3 Original and one (1) copy of the letter of first appointment to the grade of engineer after graduation. (Original with be returned).
- G.4 Original and one (1) copy of the Degree certificate or equivalent (Original will be returned).
- G.5 Original and one (1) copy of the Birth Certificate (Original will be returned).  
\*(G.4 and G.5 are applicable to direct applicants only)
- G.6 the Log Book
- G.7 Three (3) copies of the record of CPD
- G.8 Any other relevant document.