

ADVICE TO CANDIDATES PREPARING FOR THE CHARTERED MEMBERSHIP EXAMINATION



You are recommended from the earliest possible stage, to acquaint yourself fully with the nature and purpose of the examination in its present form.

You should use the self appraisal list opposite to ensure that your training, experience and examination preparation covers all the relevant demands.

NOTE: The list will also prove useful in discussing or planning training programmes with your employer, supervising engineer, training officer or sponsor.

The list may also form part of the material considered during the Branch Interview process to help evaluate the content and quality of your knowledge and readiness for the examination.

Training and experience should lead to the development and demonstration of engineering skill and judgement as an intuitive process. This should be based on the understanding, use and communication of basic engineering principles related to stability, form and strength; and not on the mechanical application of formulae, standards, codes or computer print out results.

The unusual requirement of the examination is that you must demonstrate the validity of the training and experience that you have acquired in recent years. The Institution must be satisfied that you are able to bring all the various skills you are expected to possess to the effective solution of a structural design problem, whether or not the problem is presented in terms that are within your actual experience.

A Chartered Structural Engineer must have the ability to design and a facility to communicate his/her design intentions. Where you are required to list and discuss possible structural solutions you must show brief, clear, logical and systematic presentation that you understand the general structural engineering design principles involved.

In selecting and developing your design you should also remember the guidance given in the Institution's report "Aims of Structural Design" and in particular

- (1) "the structure must be safe".
- (2) "a good design has certain typical features, simplicity unity and necessity".
- (3) "the structure must fulfil its intended function".

Self-Appraisal List

YES

NO

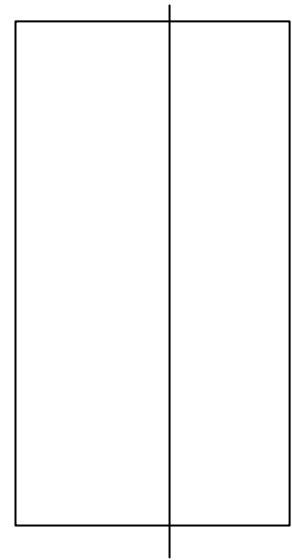
My General Preparation Has Included:

1. Understanding the form and purpose of the examination
2. Revision and preparation has included work on past papers and a review of the corresponding examiner's comments.
3. Awareness of the constraints imposed by
 - Compliance with the stated brief
 - Limitations of time
 - Necessity to obtain a pass mark in both parts of the question.

My Training/Experience and Preparation Has Included:

1. Gaining a working knowledge of the essential features of appropriate codes of practice, standards and other relevant legislative controls.
2. Development of conceptual ability. Applying knowledge, observation and experience of structures to assist in creating one or more solutions to a new and specific structural problem. These solutions should take due account of functional, aesthetic, environmental and economic considerations.
3. Understanding stability and load transfer modes for any selected structure.
4. Interpretation of site Investigation data, knowledge of foundation forms and selection criteria for appropriate solutions.
5. Assessment and appraisal of all critical load conditions and combinations based on construction, operational and environmental effects.
6. Appreciation of the constraints imposed by differences in material selection, ground conditions, site location, construction method and sequence, environment and operation or economic considerations.
7. Consideration of movement, continuity, articulation and separation.
8. Development of communication skills in the preparation of coherent design method statements, reports, letters, calculations, drawings and sketches.

9. Experience and practice in the use of approximate design methods as applied to loading, bending moment and shear force, deflection, sizing of members and connections, arrangements and framing.
10. Drawing general arrangement layouts and details.
11. Development of knowledge of basic construction processes, methods, temporary works and associated health and safety requirements.
12. Production of specifications, construction or maintenance method statements, construction programmes.



REFERENCES

Examinations CD (including past questions and reports)
Past examination papers and their examiner's reports

Institution Technical reports – see current publications list

Including: Communication of Structural Design
 Aims of Structural Design
 Structural Adequacy in Buildings

 Stability of Buildings
 Soil structure interaction: the real behaviour of structures

 Manual for the design of reinforced concrete building structures
 Manual for the design of steelwork building structures

together with papers presented in the “Structural Engineer” and other relevant journals and conference papers.

Trade organisation publications

Steel Construction Institute (SCI), British Cement Association (BCA), British Steel Timber Research and Development Association (TRADA), Brick Development Association (BDA) etc.

Codes of Practice and Standards

Current texts, manuals and handbooks covering the various materials.

To obtain a copy of the cd and /or Institution publications contact:

publications@istructe.org.uk