

PREPARATION FOR PROFESSIONAL ASSESSMENT EXAMINATION

Presented by:

Ir. Prof Emeritus K S Kannan

Member, E&Q Committee



Session 1: 6th July 2023



**Grand Ballroom,
Le Meridien Hotel, Kota Kinabalu**

Outline of Presentation

Application Form

Training and Experience Report

Overall Examiner's Report

PAE Evaluation Results

You have to prepare three major documents for submission:

1. Application Form

- includes career history/experience.

2. Training & Experience Report

– A self testimony of competence attained by candidate

3. PowerPoint presentation of selected technical work

- Maximum eight slides

To be submitted later, but not later than two days before interview.

1. Application Form

- includes career history/experience

When filling up the **Application form**, you are required to (a) describe concisely each job task or project work you have **personally** performed; (b) indicate the size and complexity of the job task or project work; and (c) specify the role you have played in the job task or project work as follows:

1. **Participating role** (participate and learn in the job task or project work)
(Candidate has minimum involvement but does not have sufficient evidence)
2. **Contributing role** (gain better experience and contribute to the job task or project work)
(Candidate has moderate involvement and sufficient evidence to show his exposure)
3. **Leading role** (lead the job task or project work and account for the outcome)
(Candidate has substantial involvement and is able to strongly indicate his exposure)

Against each job task or project work described in the application form, just put in the role you played in terms of 1, 2, or 3 under the related competence elements (A, B, C, D, E). This is to enable the PAE assessors to know all the job tasks or project works that are related to each and every competence element.



Form PAE

FORM PAE

REGISTRATION OF ENGINEERS ACT 1967

REGISTRATION OF ENGINEERS REGULATIONS 1990
(Regulation 37)

APPLICATION TO SIT FOR THE PROFESSIONAL ASSESSMENT EXAMINATION

(To be completed in BLOCK LETTERS)

Name

.....

Address:

.....

.....

.....

Tel. No : E-mail :

Identity Card No (for Malaysians):

Passport No.(for non-Malaysians): Expiry date of Passport:

.....

Date of Birth : Graduate Engineer Registration No. :

.....

Date of Graduate Engineer Registration:

.....

Branch of Engineering:

Academic or substantial equivalent Qualifications:

.....

.....

.....

I have years of practical experience in engineering and have complied with
section 10(1)(b) of the Registration of Engineers Act 1967.

I enclose herewith online payment transaction for the amount of RM 500 (Examination fee) + RM 100
(Processing fee).

Date of previous Examination (Write NIL if not applicable)

Date:

Signature:

PENALTY

Section 24(a) of the Registration of Engineers Act 1967: "Any person, sole proprietorship, partnership or body corporate who procures or attempts to procure registration or a certificate of registration under this Act by knowingly making or producing or causing to be made or produced any false or fraudulent declaration, certificate, application or representation whether in writing or

- Personal Details
- Date of GE Registration
- Branch of Engineering
- Academic Qualification
- Years of Experience
- Fees
- Signature

Lampiran PAE-1

CAREER HISTORY

I	II STATEMENT OF EXPERIENCE	III Name, Position and Email address of Engineer or Supervisor (not necessarily a PE) under whom served	State duration of experience	IV Specify your role under Areas A, B, C, D and E 1 – Minimum involvement (Participating role) 2 – Moderate involvement (Contributing role) 3 – Substantial involvement (Leading role)					V Signature of Applicant's Engineer (same discipline) who has provided training or experience mentioned
				A	B	C	D	E	
Date (month & year) relating to each appointment <i>Example:</i> <i>July 2001 to</i> <i>May 2005</i>	State Title of Position held, Name and Description of each work (Make description concise, not exceeding 100 words, and include some indication of magnitude and complexity of work in which engaged, your duties and degree of responsibility) If necessary additional sheets may be attached. <u>NOTE: EXPERIENCE MUST BE AFTER REGISTRATION AS BEM GRADUATE ENGINEER</u>		Experience (in months)	Knowledge & Understanding	Design & Development of Solution	Responsibility, Management & Leadership	Communication & Interpersonal Skills	Professional Skills	
									Signature
		Total Month							

Column IV is different; see explanation

Column III Supervisor, not necessarily a PE

Column V PE of the same or allied discipline

PAE-1 : Column IV

Duration of experience measured in months.

This refers to the total duration of each position held.

Task/work roles under Areas A, B, C, D, and E

- Against each job task or project work or a group thereof described in the application form, applicants just put in the role they played in terms of **1, 2, or 3** (refer to interpretation).
- Different roles generally denote different levels of competence. The **role numbers** put in by an Applicant represent his own views. **Examiners have to check these roles against the actual evidence.**

PAE-1 : Column IV

Interpretation of **Role Number**:

1. **Participating role** -- participate and learn on the job task or project work; usually have no or little evidence of competence (levels 0 or 1).
2. **Contributing role** -- gain more experience and contribute to the job task or project work; typically have adequate (with shortfalls) or satisfactory evidence of competence (levels 2 or 3).
3. **Leading role** -- lead the job task or project work and account for the outcome; generally have satisfactory or good evidence of competence (levels 3 or 4).

Note: Examiners have to **triangulate** the role number with **actual evidence** provided by Applicants before gauging the level of attainment.



Lampiran PAE-2



APPENDIX PAE-2

CERTIFICATION BY APPLICANT PROFESSIONAL ASSESSMENT EXAMINATION

Mark (✓) in the appropriate box.

I certify that I;

Have not taken the Board of Engineer Malaysia (BEM) Professional Assessment Examination (PAE)

Have failed the Board of Engineer Malaysia (BEM) Professional Assessment Examination (PAE) taken on *

Have applied/ taken the IEM (Institution of Engineering Malaysia) Enhanced PI (Professional Interview)

Have failed the IEM (Institution of Engineering Malaysia) Enhanced PI (Professional Interview) on *

Any other statement:

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

Yours truly,

Name in full: _____ :

Identity card/Passport No::

Graduate registration number No:

Attention: * *State the date*

Certification / Declaration relating BEM PAE and/or IEM PI

YES

NO

☐☐☐☐☐☐☐☐

2. Training & Experience Report

Self testimony of competence gained

Four competence areas will be self-reported:

A. KNOWLEDGE AND UNDERSTANDING OF ENGINEERING

B. PRACTICAL APPLICATION OF ENGINEERING

C. MANAGEMENT AND LEADERSHIP

D. COMMUNICATION AND INTERPERSONAL SKILLS

The four areas above will be assessed during the **oral interview**

A fifth competence area:

E. ETHICAL & PROFESSIONAL CONDUCT

will be assessed by a ***sit-in written examination***

Training & Experience Report

Fill up this form

TRAINING & EXPERIENCE REPORT BASED-ON-COMPETENCE-GAINED

Name: _____
Branch of registration: _____
Graduate Registration number: _____

How should you use this section?

The four areas of Competence, A, B, C and D, must be demonstrated in order to practice professionally. They are subdivided further into thirteen (13) Competency Elements, i.e. A(1-3), B(1-3), C(1-3) and D(1-3).

For each of the Competency Elements, you are required to explain in a narrative your work experiences as evidence which has contributed to the competency.

These narratives will be the evidence used for demonstration by you and as the basis for assessment by examiners during the Professional Assessment Examination (PAE).

Please ensure the narrative, or evidence, for each of the Competency Element has around 300-500 words depending on the amount and variety of your experience.

What are the levels of competency expected?

While a Professional Engineer is expected to be able to demonstrate his/her competence in all of the areas listed, the depth and extent will vary with the nature and requirements of his/her experience.

Hence you are expected to demonstrate a degree of competence in each area at a level which is consistent with your actual specific role/s. You may have a higher level of competence in some areas than others, and possibly the levels may be quite limited in certain areas.

However, you need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to your role. Overall, you need to demonstrate an appropriate balance of competencies.

What constitute evidence of your competencies?

Evidence that need to be demonstrated are narratives of your work experiences and proficiencies which has contributed to the competency as you engaged in various engineering activities and/or encountered engineering problems in your career.

The given examples of activities to demonstrate Competency Element listed in the template which follows, are examples of evidence that demonstrate the specific competency. They provide guidance to help identify those appropriate for the particular Competency Element.

They are included as examples only, since the most appropriate activities may vary with each individual. The list is not exhaustive and other types of activities might be valid.

Normally, there is no necessity to refer to all of your activities for evidence in any area of competence. If you have had many roles, select those which are most relevant and best illustrate the Competency Element. Examples from two or several projects or tasks would usually be appropriate, being very specific in the descriptions of each.

The objective is to convince the interviewers such that, before you walk into the interview, they already think you are indeed "PE material" and all they have to do is confirm your competence.

How should you do the write-up?

You need to do the write-up in this template carefully and concisely, highlighting your key role and responsibilities (not merely a job description) and achievements as evidence for each Competency Element.

Some example points that you can elaborate as evidence are:

- Explanation of the context and justifications in which you made decisions.
- Benefits of presenting technical information for review by others.
- Explanation of investigation results; and how you ensured the quality of the data used.
- Justification on choice of techniques, software, etc that guided your technical decisions.
- Description of how you reached to particular outcome.
- Technological changes which affected your methods or decisions.

Further guidance when writing-up:

- Focus on your individual achievements, not what the team did. Try as much as possible to use phrases such as "I designed", "I negotiated", "I led a construction team", "I participated in", "I implemented", "I achieved", etc.

Use terms which can be understood by a non-specialist in your field. Avoid use of jargon and unnecessary or unexplained abbreviations.

- Indicate the size and complexity of the projects or tasks for which you had direct or partial responsibility; for example, numbers of people supervised, the value in financial terms of the activity.

Your write-up will be the main reference during the interview, therefore it is in your own interest to present your work clearly.

-----Page Break-----

COMPETENCY AREAS & ELEMENTS

Competency Element	Competency Area-A: KNOWLEDGE AND UNDERSTANDING OF ENGINEERING Comprehension of advanced engineering knowledge of the widely-applied principles underpinning good practice
A1	<p>Broadening personal knowledge, understanding and technical skills in applicant's own and/or allied fields of specialisation.</p> <p>Examples of activities as evidence to demonstrate this competency:</p> <ul style="list-style-type: none"> → Formal training or post-graduate study related to your role. → Learning and/or developing new engineering knowledge in a different industry or role. → Learning current and/or emerging technology and technical best practice in your area. → Developing a broader and deeper knowledge base through research and experimentation. → Learning and developing new engineering techniques and theories in the workplace.
A2	<p>Broadening personal knowledge and experience in relation to products or services engaged by and/or possibly with a view to improvement.</p> <p>Examples of activities as evidence to demonstrate this competency:</p> <ul style="list-style-type: none"> → Carrying out technical research and development. → Learning, analysing and/or developing solutions involving complex, non-standard, multidisciplinary or safety-critical problems. → Learning and/or developing new applications, designs, processes or systems based on new, established or evolving technology. → Learning, developing and/or evaluating continuous improvement systems. → Identifying constraints and exploit opportunities for development and transfer of technology.

How should you do the write-up?

- You need to do the write-up in this template carefully and concisely, highlighting your **key role and responsibilities** (not merely a job description), and **achievements**, as evidence for each Competency Element.
- The length of the narratives, or evidence, should be around **300 - 500 words for each of the Competency Elements**, depending on the amount and variety of your experience.

What constitute evidence of your competencies?

Evidence that need to be demonstrated are **narratives of your work experiences and proficiencies which has contributed to the competency** as you engaged in various engineering activities, and/or as you encountered engineering problems in your career.

- Normally there is **no necessity to refer to all** of your activities for evidence in each area of competence. If you have had many roles, select those which are most relevant and best illustrate the Competency Element. Examples from two or several projects or tasks would usually be appropriate, being very specific in the descriptions of each.
- The objective is to convince the interviewers such that, before you walk into the interview, they already think you are indeed “PE material” and all they have to do is confirm your competence.

What is meant by **EVIDENCE**?

For the purpose of the PAE documents

- Evidence mainly refer to narratives of your work experiences, i.e. as self-testimonies of competences gained by you.
- Evidence does not normally refer to records, documents or objects;
 - however you may wish to include these as supporting materials in the form of softcopy appendices or loose items brought during the interview.

What are the levels of competency expected?

- While a Professional Engineer is expected to be able to demonstrate his/her competence in all of the areas listed, the **depth and extent will vary** with the nature and requirements of his/her experience.
- Hence you are expected to demonstrate a **degree of competence in each area at a level which is consistent with your actual specific role/s**. You may have a higher level of competence in some areas than others, and possibly the levels may be quite limited in certain areas.
- However, you need to demonstrate an **understanding of, and familiarity with, the key aspects of competence in all areas** as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to your role.
- Overall, you need to demonstrate a **balance** of competencies that is appropriate for your role as a Professional Engineer.

EXAMPLES

For

NARRATIVES

OF

COMPETENCY ELEMENTS

General example elaborations that you can use for the narratives

- Explanation of the context and/or justifications in which you made decisions.
- Benefits of presenting technical information for review by others.
- Explanation of investigation results; and how you ensured the quality of the data used.
- Justification on choice of techniques, software, etc. that guided your technical decisions.
- Description of how you reached to particular outcome.
- Technological changes which affected your methods or decisions.

EXAMPLES OF SPECIFIC EVIDENCE GIVEN IN TEMPLATE

- **The given examples of activities for each Competency Element are example evidence that demonstrate the specific competency element.**
- They provide guidance to help you identify those appropriate for your experience.
- They are intended as examples only, since the most appropriate activities will vary with each individual role. The list is not exhaustive and other types of activities might be valid.

EXAMPLES OF POINTS FOR THE WRITE-UP

Competency Element

Competency Area A: KNOWLEDGE AND UNDERSTANDING OF ENGINEERING

A1

Broadening personal knowledge, understanding and technical skills in applicant's own and/or allied fields of specialisation.
Examples of activities as evidence to demonstrate this competency:

- Formal training or post-graduate study related to your role
- Learning and/or developing new engineering knowledge in a different industry or role
- Learning current and/or emerging technology and technical best practice in your area
- Developing a broader and deeper knowledge base through research and experimentation
- Learning and developing new engineering techniques and theories in the workplace

A2

Broadening personal knowledge and experience in relation to products or services engaged by applicant, possibly with a view to improvement.

Examples of activities as evidence to demonstrate this competency:

- Carrying out technical research and development
- Learning, analysing and/or developing solutions involving complex, non-standard, multidisciplinary or safety-critical problems
- Learning and/or developing new applications, designs, processes or systems based on new, established or evolving technology
- Learning, developing and/or evaluating continuous improvement systems
- Identify constraints and exploit opportunities for development and transfer of technology

A3

Learning, comprehension and application of relevant engineering codes, standards, specifications and/or guidelines, especially those appropriate to local context, requirements, and application.

Examples of activities as evidence to demonstrate this competency:

- Understanding and applying the relevant codes and standards relevant to engaged projects
- Development of codes, standards, specifications and/or guidelines
- Localisation of international codes, standards, specifications and/or guidelines

Competency Area B:

PRACTICAL APPLICATION OF ENGINEERING:

Competency Element

Application of appropriate theoretical and practical methods to the analysis, design and/or solution of engineering problems

B1

Review and/or identification of project requirements, problems, opportunities and/or engineering techniques.

Examples of activities as evidence to demonstrate this competency:

- Identifying/defining engineering problems or future needs in work place
- Reviewing/identifying technical improvements to services, products, processes or systems
- Preparing specifications, taking account of functional and other requirements
- Establishing user requirements for solution of engineering problems
- Reviewing specifications and tenders to identify technical issues and potential improvements
- Carrying out technical risk analysis and identifying mitigation measures
- Reviewing and selecting techniques to undertake engineering tasks.
- Exploring and assessing opportunities relating to new and emerging technologies

B2

Investigations, analysis, design and development of engineering solutions.

Examples of activities as evidence to demonstrate this competency:

- Selecting appropriate investigation and research methodologies needed to undertake engineering tasks
- Investigating a technical issue, identifying potential solutions and determining the factors needed to compare them
- Identifying and carrying out tests or trials, and analysing and evaluating the results
- Carrying out technical design, simulations, analysis or value engineering.
- Preparing, presenting and deciding on design recommendations, with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact

B3

Implementation of design solutions or other engineering tasks, and evaluating their effectiveness

Examples of activities as evidence to demonstrate this competency:

- Implementing solutions to engineering tasks.
This includes construction, fabrication, supervision and/or commissioning of projects in accordance to design and specifications. The implementation takes account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning.
- Identifying lessons learned
- Ensuring that the implementation will result in the appropriate practical outcome
- Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations
- Actively learning from feedback on results to improve future design solutions and contributing to accepted best practices

Competency

Competency Area C: MANAGEMENT AND LEADERSHIP

Element

Responsibility, management and leadership in relation to technical, commercial and financial matters.

C1

Planning to enable effective implementation of projects or engineering tasks.

Examples of activities as evidence to demonstrate this competency:

- Preparing budgets and associated work programmes for projects or tasks
- Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations
- Carrying out a task or project risk assessment and identifying mitigation measures
- Leading on preparing and agreeing implementation plans and method statements
- Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies
- Ensuring that information flow is appropriate and effective

C2

Managing budget, people and other resources for an engineering task or project.

Examples of activities as evidence to demonstrate this competency:

- Setting up appropriate management systems
- Establishing and maintaining quality standards and budget within legal and statutory requirements
- Organising/coordinating/directing work teams and project activities
- Managing the balance between quality, cost and time
- Scheduling, monitoring and control of work progress and costs , taking appropriate corrective actions when required
- Interfacing effectively with customers, contractors and other stakeholders
- Gather and evaluate feedback and recommend improvements.

C3

Leadership of teams in the workplace, developing and assisting colleagues to meet changing technical and managerial needs.

Examples of activities as evidence to demonstrate this competency:

- Agreeing objectives and work plans with teams and individuals
- Reinforcing team commitment to professional standards
- Leading and supporting team and individual development
- Assessing team and individual performance, and providing feedback
- Seeking input from other teams or specialists where needed and managing the relationship
- Providing specialist knowledge, guidance and input to engineering teams, engineers, customers, management and relevant stakeholders
- Leading a research programme
- Leading an undergraduate university programme
- Developing and delivering a teaching module/course at Masters or PhD level

C4

Promotion of continuous quality improvement and best practices

Examples of activities as evidence to demonstrate this competency:

- Promoting quality throughout the organisation as well as its customer and supplier networks
- Developing and maintaining operations to meet accepted quality standards
- Supporting or directing project evaluation and proposing recommendations for improvement
- Implementing and sharing the results of lessons learned

Competency Area D:

COMMUNICATION AND INTERPERSONAL SKILLS

Competency Element

Ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively

D1

Effective communication in the National Language and/or English Language with others, at all levels.

Examples of activities as evidence to demonstrate this competency:

- Preparing reports, specifications and other documentation on complex matters
- Leading, chairing, contributing to and recording meetings and discussions
- Exchanging information and providing advice to colleagues
- Engaging or interacting with professional networks

D2

Effective presentation and discussion of proposals, justifications and conclusions.

Examples of activities as evidence to demonstrate this competency:

- Contributing to scientific papers or articles as an author
- Preparing and delivering presentations on substantive matters
- Preparing and/or presenting bids, proposals, plans, studies, etc.
- Leading and sustaining debates with audiences
- Feeding back results of discussion to improve proposals, papers, etc.

D3

Personal and social skills, with awareness of diversity and inclusion issues.

Examples of activities as evidence to demonstrate this competency:

- Knowing and managing own emotions, strengths and weaknesses
- Being confident and flexible in dealing with new and changing interpersonal situations
- Identifying, agreeing and working together towards collective goals
- Creating, maintaining and enhancing productive working relationships
- Resolving conflicts
- Being supportive of the needs and concerns of others, especially where this relates to issues of diversity and inclusion

Let's look in detail the examples for
Competency B
**Application of
Engineering Knowledge**

Competency Area B:

PRACTICAL APPLICATION OF ENGINEERING:

Application of appropriate theoretical and practical methods to the analysis, design and/or solution of engineering problems

Competency Element B1

Review and/or identification of project requirements, problems, opportunities and/or engineering techniques

Examples of activities as evidence to demonstrate this competency:

- 1. Identifying/defining engineering problems or future needs in work place**
- 2. Reviewing/identifying technical improvements to services, products, processes or systems**
- 3. Preparing specifications, taking account of functional and other requirements**
- 4. Establishing user requirements for solution of engineering problems**
- 5. Reviewing specifications and tenders to identify technical issues and potential improvements**
- 6. Carrying out technical risk analysis and identifying mitigation measures**
- 7. Reviewing and selecting techniques to undertake engineering tasks.**
- 8. Exploring and assessing opportunities relating to new and emerging technologies**

Competency Area B:

PRACTICAL APPLICATION OF ENGINEERING:

Application of appropriate theoretical and practical methods to the analysis, design and/or solution of engineering problems

Competency Element B2

Investigations, analysis, design and development of engineering solutions.

Examples of activities as evidence to demonstrate this competency:

- 1. Selecting appropriate investigation and research methodologies needed to undertake engineering tasks**
- 2. Investigating a technical issue, identifying potential solutions and determining the factors needed to compare them**
- 3. Identifying and carrying out tests or trials, and analysing and evaluating the results**
- 4. Carrying out technical design, simulations, analysis or value engineering.**
- 5. Preparing, presenting and deciding on design recommendations**
(with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact)

Competency Area B:

PRACTICAL APPLICATION OF ENGINEERING:

Application of appropriate theoretical and practical methods to the analysis, design and/or solution of engineering problems

Competency Element B3

Implementation of design solutions or other engineering tasks, and evaluating their effectiveness

Examples of activities as evidence to demonstrate this competency:

- 1. Implementing solutions to engineering tasks.**
This includes construction, fabrication, supervision and/or commissioning of projects in accordance to design and specifications.
The implementation takes account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning.
- 2. Identifying lessons learned**
- 3. Ensuring that the implementation will result in the appropriate practical outcome**
- 4. Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations**
- 5. Actively learning from feedback on results to improve future design solutions and contributing to accepted best practices**

Further guidance when writing-up :-

- Focus on your individual achievements, not what the team did.
- Try as much as possible to use phrases such as “I designed”, “I negotiated”, “I led a construction team”, “I participated”, “I implemented”, “I achieved”, etc..
- Use terms which can be understood by a non-specialist in your field. Avoid use of jargon and unnecessary or unexplained abbreviations.
- Indicate the size and complexity of the projects or tasks for which you have had direct or partial responsibility. For example, highlight numbers of people supervised, or the value in financial terms of the activity.

Your write-up of the Training & Experience Report will be evidence of your competencies.

It will become the main reference during the interview, therefore it is in your own interest to present your points clearly.

OVERALL EXAMINER'S GUIDELINES

EXAMINER'S GUIDELINES

In assessing the Competence Attainment Level for each discrete competency element, the following threshold scores are used:

- Level 0 (0 point) – No evidence of competence
- Level 1 (1 point) – Little evidence of competence
- Level 2 (2 points) – Adequate evidence with shortfalls
- Level 3 (3 points) – Satisfactory level of evidence
- Level 4 (4 points) – Good level of evidence

EVIDENCE refer to facts/information available from the application documents and the interview to support assessment of the candidate's competence gained from his training.

EXAMINER'S GUIDELINES *(cont.)*

The marks (points) allocated will be based on the **evidence as given by the candidate in the application form** as well as the **training & experience report**, and **verified during the interview**.

It should be measured mainly by taking into account:-

- (a) each job task or project work performed by the candidate;
- (b) the size and complexity of each job task or project work;
- (c) the role played by the candidate in each job task or project work; and
- (d) all job tasks or project works done by the candidate related to a discrete competence element.



Sabah & Sarawak

SAMPLE ASSESSMENT FOR CATEGORY A

PAE Interview – Part I (a)						
Competency Area A – Knowledge and Understanding						
Assessment Element	Attainment Level					Justification
A1 Candidate has maintained and extended personal knowledge, understanding and technical skills in own and allied fields of specialization.	0	1	2	3	4	
A2 Candidate has learnt and broadened personal knowledge and experience in the technology, products or services related to own specialization, preferably with a view to improvement.	0	1	2	3	4	
A3 Candidate has comprehended and applied knowledge and understanding of the relevant engineering codes, standards, specifications, applications, especially those appropriate to local context, requirements, and application.	0	1	2	3	4	
Average Area A Score						3

Recommendation of a PASS in PAE Interview Part I (a) is conditioned on fulfilling all the following mandatory requirements:

- a) An overall average of 2.5 or more; and***
- b) Each competence area minimum average score of 2.0.***

PAE Part I -- Interview Part I (b) -- 15-Min Presentation Rubrics and Rules			
Competency Area		Assessment	Justifications and Comments
A	Knowledge and understanding of engineering within the context of the project or work presented	Satisfactory / Unsatisfactory	
B	Practical application of engineering in terms of design & development of solution within the context of the project or work presented	Satisfactory / Unsatisfactory	
Overall Assessment			Pass / Fail

Marking Procedure and Passing Criteria

- For each of the competency areas A and B, mark the assessment as either Satisfactory or Unsatisfactory, based on the evidence demonstrated in the presentation.
- Provide brief justifications and/or comments for each assessment.
Passing of the 15-Min Presentation is conditioned upon fulfilling all the following mandatory requirements:
- Both competency areas A and B must be assessed as Satisfactory.

Note (1)

Take note of the presentation skills and triangulate it with other related evidence in assessing competency area D.

Note (2)

If the Candidate fails the 15-min Presentation, he/she may be given another chance to demonstrate competence in technical presentation by way of writing a Technical Essay. However, this chance is only given provided the candidate passes PAE Interview Part I (a).

PAE Part I -- Interview						
Part I (b) -- Technical Essay as an Alternative Assessment						
Rubrics and Rules						
Technical Knowledge and Application (T)						
Assessment Element	Rated Threshold					Justifications
T1 -- Understand the scientific & engineering fundamentals of related discipline and own specialisation (Competence Element A1)	0	1	2	3	4	Average Category T Score:
T2 -- Apply the appropriate theoretical and practical methods to the analysis and solution of engineering problems (Competence Element B2)	0	1	2	3	4	
T3 – Apply the engineering knowledge related to local practices, codes, standards, specifications, materials, products, environments, etc. (Competence Element A3)	0	1	2	3	4	
Writing Proficiency (W)						
Assessment Element	Rated Threshold					Justifications
W1 - Understand the question clearly and answer it with suitable technical contents and relevant examples (Competence Element D1)	0	1	2	3	4	Average Category W Score:
W2 - Present the answer concisely and coherently with proper heading and paragraphing (Competence Element D2)	0	1	2	3	4	
W3 - Present the answer legibly with acceptable grammar, lexicon, spelling, and punctuation (Competence Element D1)	0	1	2	3	4	
Overall Average Score = (T + W) / 2						Pass / Fail

Assessment Rules of Technical Essay

(i) **Average Score of T** -- add up the rated scores of T1, T2 and T3, and divide it by 3. The average score should be rounded to one decimal.

(i) **Average Score of W** -- add up the rated scores of W1, W2 and W3, and divide it by 3. The average score should be rounded to one decimal.

Overall Average Score -- *add up the average scores of T and W, and divide it by 2. The average score should be rounded to one decimal.*

Recommendation of a Pass in Technical Essay is conditioned on fulfilling all the following requirements:

- **An overall average of 2.5 or more; and**
- **Average score of 2.0 or more for T and W respectively.**

Note –

- (1) Examiners are required to set two technical essay questions for the Candidate to choose one to answer;
- (2) The set questions should be relevant to the engineering branch and specialisation of the Candidate;
- (3) Each question should be set in such a manner that the Candidate can answer it in terms of T1, T2 and T3 so as to facilitate marking



**PAE Part II -- Code of Conduct Essay
Rubrics and Rules**

Assessment Element	Rated Threshold					Justifications
E1 -- Comply with the relevant codes of conduct	0	1	2	3	4	
E2 -- Manage and apply safe systems of work	0	1	2	3	4	
E3 -- Undertake engineering activities in a way that contributes to sustainable development	0	1	2	3	4	
E4 -- Carry out CPD necessary to maintain and enhance competence in own area	0	1	2	3	4	
E5 -- Understand the legal matters of engineering profession and be able to communicate with legal personnel on these issues	0	1	2	3	4	
Average Score of Category E						Pass / Fail

Recommendation of a Pass in the Code of Conduct Essay is conditioned upon fulfilling all the following mandatory requirements:

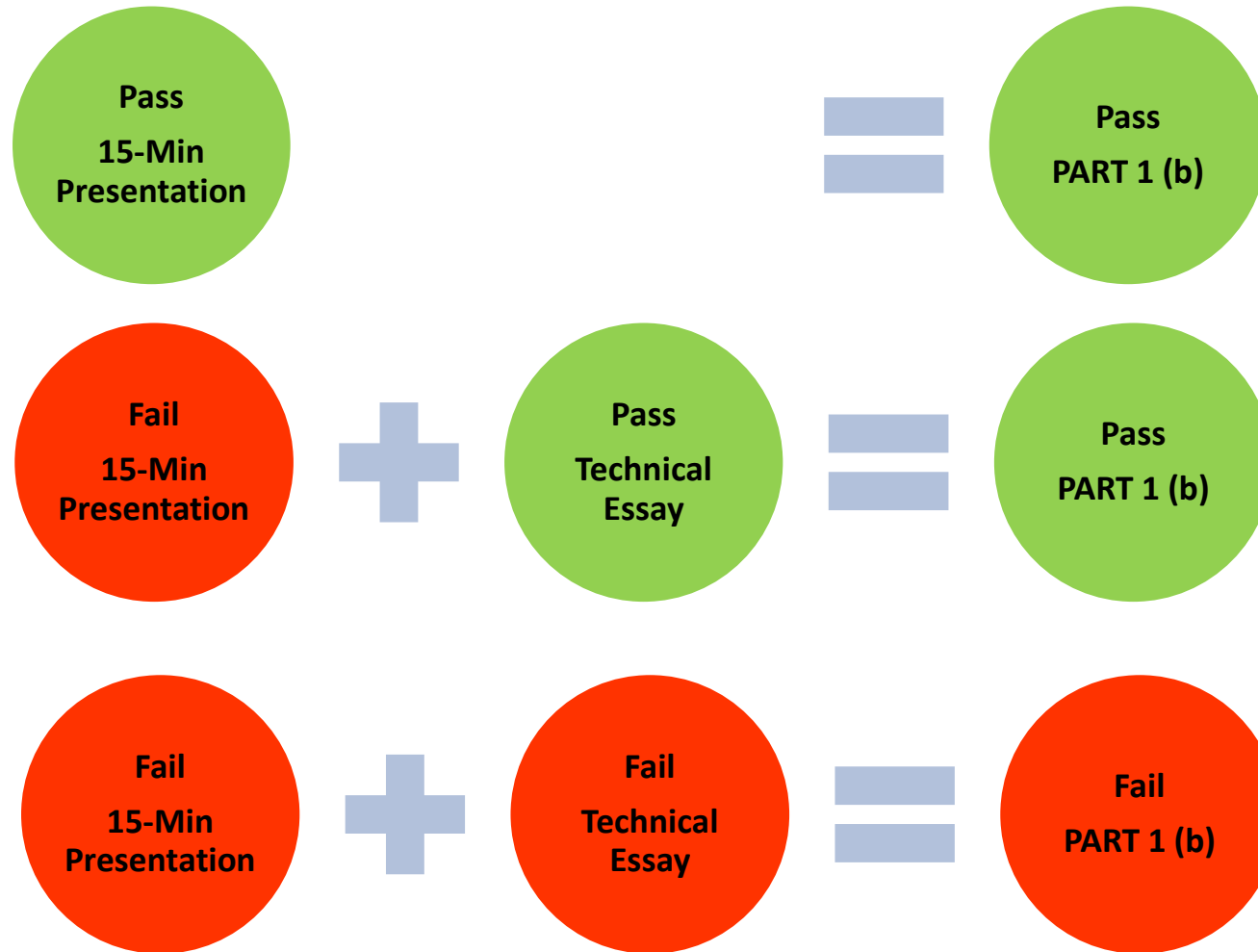
- ***An average score of 2.5 or more; and***
- ***A rated score of 2.0 or more for each of the E1, E2, E3, E4 and E5 respectively.***

Summary of **PAE Evaluation Results**

PAE Evaluation Results - Summary

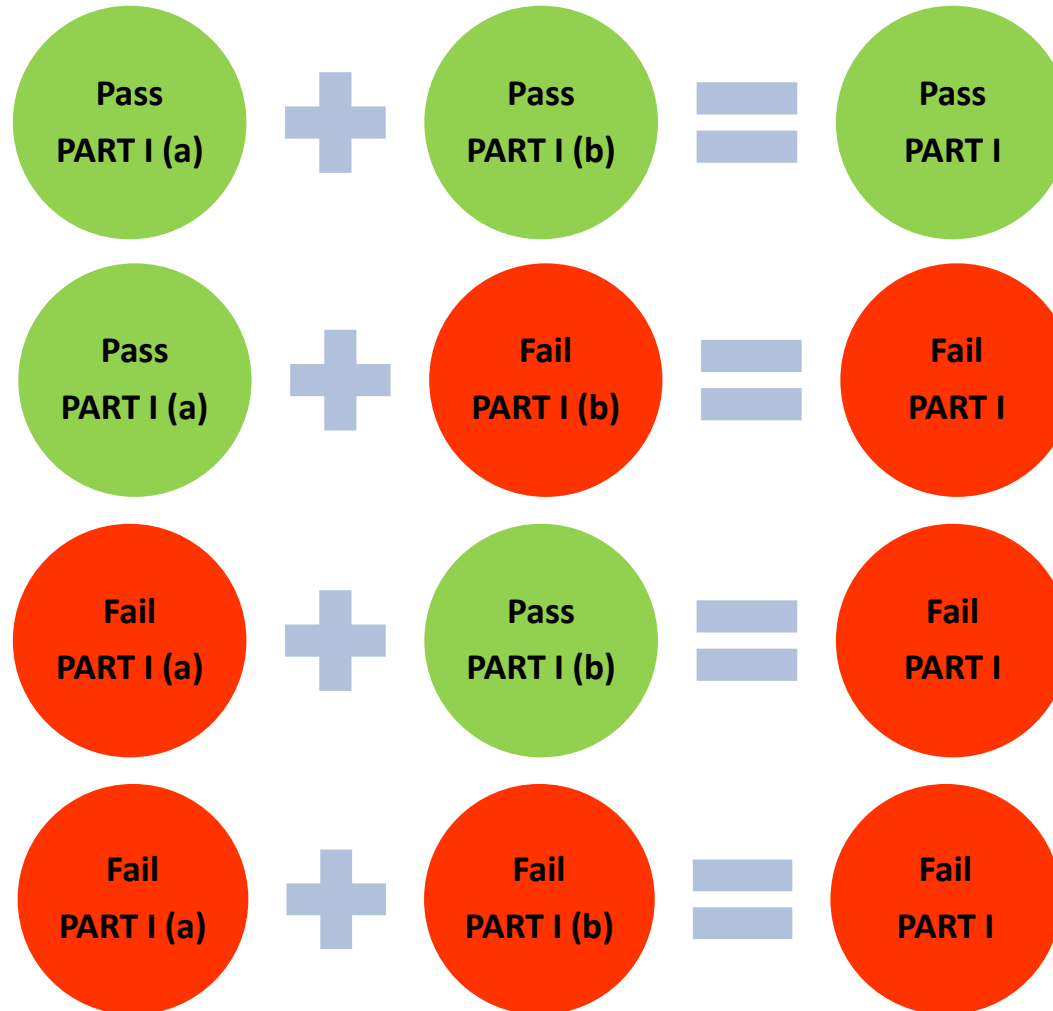
Part I – Interview Result		
Part I (a) – Assessment of Competence Areas A, B, C, and D <i>(Refer to the assessment result of the interview in Part I (a)).</i>		Pass / Fail
Part I (b) – Assessment of Technical Presentation		Pass / Fail
15-Min Presentation <i>(Refer to the assessment result of 15-Min Presentation)</i>	Satisfactory / Not Satisfactory	
Technical Essay (If required by the Examiners) <i>(Refer to the assessment result of Technical Essay)</i>	Pass / Fail	
Overall Part I - Interview Result		PASS / FAIL
Part II – Code of Conduct Essay Result		
Code of Conduct Essay <i>(Refer to the assessment result of Code of Conduct essay)</i>		PASS / FAIL

Part I (b) - Evaluation Result



**To pass Part 1(b),
Candidates should
pass either the 15-
Min Presentation
or the Technical
Essay (if required).**

Part I - Evaluation Result



**To pass Part I,
Candidates must
pass both Part I(a)
and Part I(b).**

PAE Evaluation Results - Summary

Assessment Rules and Procedure for **Part I**

- The **core of the interview** is the assessment of Competence Areas A, B, C, and D – **Part I (a)**.
- If the candidate fails Part I (a), he will straightaway fail the entire Interview. In this case, there is no need for the candidate to write a technical essay if he/she fails the presentation.
- If the candidate passes Part I (a) but fails the 15-Min presentation, he/she will be given a chance to write a technical essay as an alternative means of assessing his/her competence in technical presentation.

PAE Evaluation Results - Summary

Assessment Rules and Procedure for Part I

- The candidate is considered to have passed Part I (b) if he/she passes the 15-Min Presentation; or failing which passes the Technical Essay.
- **Recommendation of a Pass** in the Interview (Part I) is conditioned upon fulfilling all the following mandatory requirements:
 - ✓ A pass in **Part I (a)** -- Assessment of Competence Categories A, B, C, and D; and
 - ✓ A pass in **Part I (b)** -- Assessment of 15-Min Presentation; or Technical Essay if required.

PAE Overall Recommendation

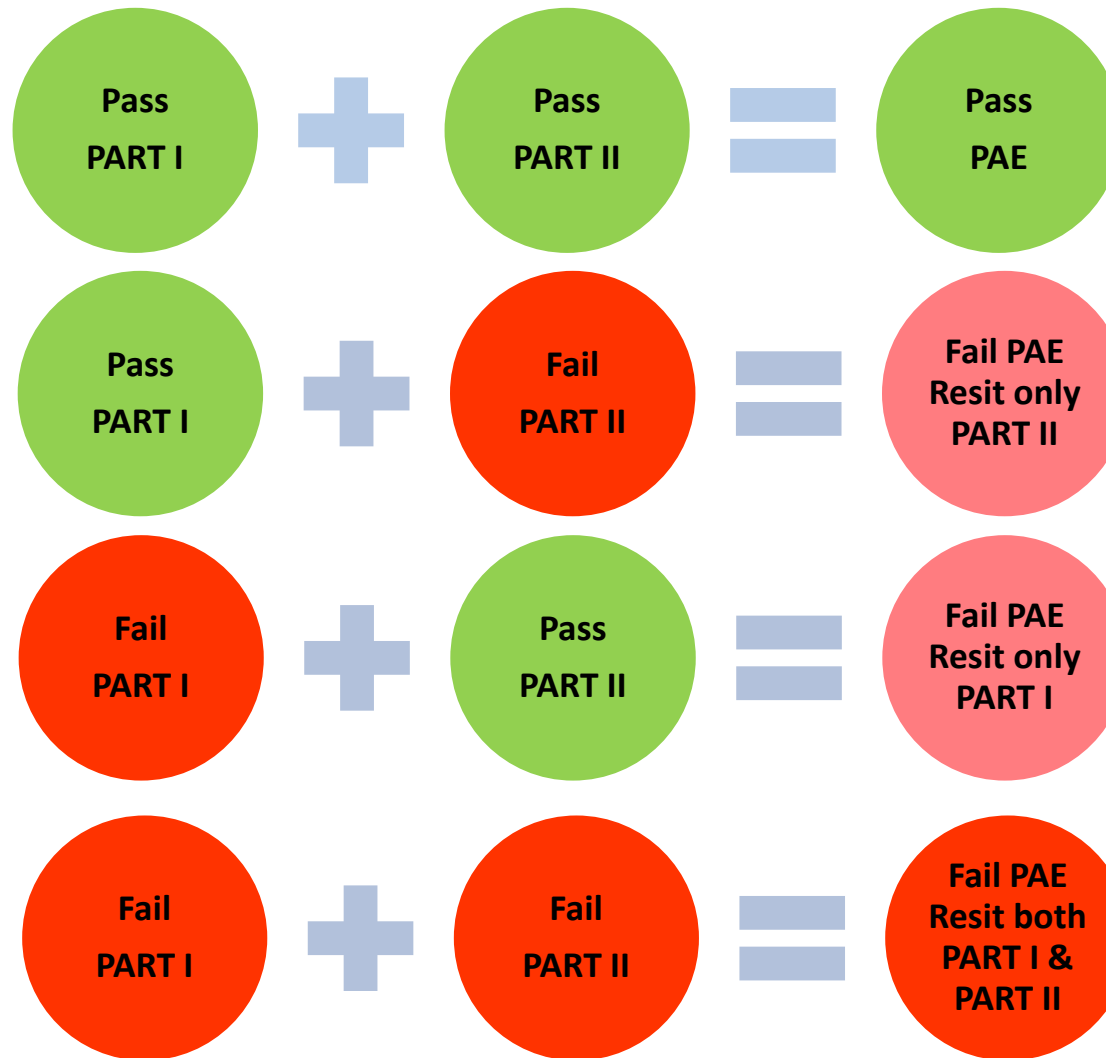
Assessment Rules for Overall Recommendation

- **Part I and Part II are assessed independently.**
- **If the candidate passes the Interview but fails the Code of Conduct Essay, he will be required to re-sit only the Code of Conduct Essay.**
- **If the candidate fails the Interview but passes the Code of Conduct Essay, he will be required to re-sit only the Interview.**

Recommendation of a Pass in PAE is conditioned upon fulfilling all the following mandatory requirements:

- *A pass in **Part I – the Interview**; and*
- *A pass in **Part II – the Code of Conduct Essay**.*

Overall Evaluation Result



**To pass PAE,
Candidates must
pass both Part I and
Part II.**

**For partial failure,
Candidates only
have to re-sit the
part they failed.**

**For total failure,
Candidates have to
re-sit the entire PAE.**

PAE Overall Recommendation

Overall Recommendation		
Refer to Guidelines	Tick only one box	
Pass PAE via passing the Interview (Part I) and the Code of Conduct Essay (Part II)		
Pass the Interview (Part I) only and has to re-sit the Code of Conduct Essay (Part II)		
Pass the Code of Conduct Essay (Part II) only and has to re-sit the Interview (Part I)		
Fail both the Interview (Part I) and the Code of Conduct Essay (Part II), and has to re-sit the entire PAE.		
Overall Comment by Examiners: (Especially on areas of weaknesses for candidates who have failed)		
Name of Examiners	BEM Registration No.	Signature
1)		
2)		



Q & A

THANK YOU



"Committed To Engineering Excellence"

BOARD OF ENGINEERS MALAYSIA

Tingkat 11 & 17, Blok F Ibu Pejabat JKR
Jalan Sultan Salahuddin, 50580 Kuala Lumpur

<http://www.bem.org.my>

enquiry@bem.org.my or complaint@bem.org.my.

Tel: 03-26912090; Fax: 03-26925017

Acknowledgement:

BEM acknowledges the Engineering Council of the UK for their leading role in the development of outcome-based criteria for professional assessments of competences. A significant part of this presentation is adapted from publicly-accessible information and documentation from the EC-UK website, in particular The UK Standard for Professional Engineering Competence (UK-SPEC) 4th Ed.