**SO1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and mathematics.**

**Passing criterion >= 70%**

PI 1-1 Identify and formulate engineering problems

PI 1-2 Solve problems by applying mathematic and engineering knowledge

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PI 1-1 Identify and formulate engineering problems

PI 1-2 Solve problems by applying mathematic and engineering knowledge

**EGCO202 Numerical Methods and Applications**

**Final Exam**

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| **Student No.** | **PI 1-1** | **PI 1-2** |
| --- | --- | --- |
| 1 | 1 | 1 |
| 2 | 1 | 1 |
| 3 | 1 | 1 |
| 4 | 1 | 0 |
| 5 | 0 | 0 |
| 6 | 3 | 2 |
| 7 | 3 | 3 |
| 8 | 2 | 3 |
| 9 | 5 | 5 |
| 10 | 4 | 5 |
| 11 | 1 | 0 |
| 12 | 2 | 2 |
| 13 | 1 | 0 |
| 14 | 1 | 0 |
| 15 | 2 | 0 |
| 16 | 1 | 2 |
| 17 | 2 | 2 |
| 18 | 3 | 3 |
| 19 | 3 | 3 |
| 20 | 5 | 5 |
| 21 | 1 | 1 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 1 | 1 |
| 25 | 1 | 1 |
| 26 | 1 | 2 |
| 27 | 5 | 5 |
| 28 | 2 | 3 |
| 29 | 3 | 3 |
| 30 | 1 | 1 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 2 | 1 |
| 34 | 1 | 1 |
| 35 | 3 | 4 |
| Number of Pass | 10 | 11 |

PI 1-1: Attainability = 10/35 = 28.5% **Not Attainable**

PI 1-2: Attainability = 11/35 = 31.4% **Not Attainable**

**SO1 Conclusion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PI** | **Attainability** | **Reason** | **Remedial Action** | **Action plan** | **Measurements** |
| 1-1 | 28.5%  (not attainable) | Student do not understand the concept of mathematical modelling | Increase foundation mathematics and mathematical modelling | Next semester | Next semester |
| Student do not familiar with the problem of balancing chemical equations | Provide the description of the problem. | Next semester | Next semester |
| 1-2 | 31.4%  (not attainable) | This question is related to the previous questing. | Break down the question that do not related to the previous question | Next semester | Next semester |
| Wrong calculation | Using Gaussian Elimination with Partial Pivoting | Next semester | Next semester |