

PROBLEM SOLVING

Data

Whatever is “given” in the problem (10% of total marks)

Objective

Whatever is "to find" (to draw, to prove) in the problem (10%)

Solvability

Whether the problem is over determined, critically determined or under determined (10%)

Strategy to solve the problem

The physical law or the mathematical equation applied to solve + the assumptions/limitations of the model used [mention of alternate methods available, the most efficient and the most effective method to reach a solution] (15%)

Setting up of the problem

Coördinate axes, diagrams, conversions in SI [include a table of conversion factors used, symbols/terms used] (15%)

Solution of the problem

Solution using mathematics, physics or logic [solution to be in two columns, the left-hand column containing steps of the solution and the right-hand column their justifications] (30%)

Result(s)

Should be quoted to proper significant figures, solely in the language of data and objective, without referring anything introduced in setting up of problem (10%)

Total 100%

Source: From Mathematics to Technology — A Bridge through Physics and Engineering
<http://www.ngds-ku.org/Papers/C70.pdf>

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