 12Apps Investigation 2 Networks: Marking Rubric

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|  | 4 | 3 | 2 | 1 | 0 |
| PART 1 | | | | | |
| **Introduction** | Formulates the problem with detailed explanation. | Formulates the problem with some explanation. | Rewrites the given problem. | Writes the question. | No introduction. |
| **Identifies and organises relevant information** | Displays clear and concise data:  Data is presented in tabular, diagrammatic or graphical form. | Displays some data clearly:  Data is presented in tabular, diagrammatic or graphical form. | Displays some data:  Data is presented in tabular, diagrammatic or graphical form. | Displays data using an inappropriate representation. | Does not display data. |
| Clearly identifies the underlying assumptions related to the investigation. | Refers to assumptions of the investigation in a vague or general way. | Identifies only one assumption of the investigation | Identifies some mathematical content related to the investigation. | Makes no links to mathematical content of the investigation. |
| PART 2 | | | | | |
| **Identifies and organises relevant information** | Draws a weighted network, identifies variables, includes many possible connections between nodes. | Draws a weighted network, identifies variables, includes only one connection between nodes. | Draws a weighted network. | Draws a simple network. |  |
| **Chooses effective models and methods and carries the methods through correctly** | Correctly applies shortest path procedure, identifies a clear path and gives the total value of that path as km **and** time. | Correctly applies shortest path procedure, identifies a clear path and gives the total value of that path as km **or** time. | Identifies a path, represents if graphically and provides a total weight for that path as km **and/or** time. | Identifies a path and represents it graphically. |  |
| Identifies path as Hamiltonian or Eulerian. Identifies as path or cycle. Explains choice of description. | Identifies path as Hamiltonian or Eulerian. Explains choice of description. | Identifies path as Hamiltonian or Eulerian. |  |  |
| **Follows mathematical conventions accurately** | Selects, extends and applies mathematical procedures to investigate a problem. | Selects and applies mathematical procedures previously learnt to investigate a problem. | Selects and applies, with direction, mathematical procedures previously learnt to investigate a problem. | Attempts to apply, with direction, mathematical procedures previously learnt to investigate a problem. |  |
| PART 3 | | | | | |
| **Links mathematical results to data and contexts to reach reasonable conclusions** | Recognises implied conditions in real-life applications and defines and explains the limitations of models. | Identified specified conditions in real-life applications, recognises and rejects inappropriate solutions. | Identifies specified conditions in real-life applications. |  |  |
| Identifies a problem in their network, defines how this affects their network and provides a new network to compensate for the problem. | Identifies a problem in relation to their network, attempts a solution and presents an alternative network. | States a specific problem in relation to their network and attempts a solution. |  |  |
| PART 4 | | | | | |
| **Communicates mathematical reasoning, results and conclusions** | Communicates investigation findings with a comprehensive interpretation of mathematical results in the context of the investigation. | Communicates investigation findings in a systematic and concise was using mathematical language and relating the solution to the original problem. | Communicates investigation findings in a systematic way, using some mathematical expression and everyday language. | Offers simple conclusions that are not supported by data or calculations. |  |

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| **Overall Comment:**  **Total Mark: / 40** |