Government of Western Australia
School Curriculum and Standards Authority

WACE
Western Australian Certificate of Education

ENGINEERING STUDIES

GENERAL COURSE

Marking key for the Externally set task

Sample 2016

Engineering Studies

Externally set task – marking key

In relation to the engineering design process you have studied and applied during the year, reflect on a product you devised.

1. Outline the design brief. **(6 marks)**

Description	Marks
Describes clearly the required needs for the product, outlines function, likely specifications; may include possible aesthetics and likely environment for the product.	5–6
Describes the product in simple terms of function and/or specific uses/operation of the product.	3–4
Provides general description of a product with limited specific details.	1–2
Total	**6**

2. Describe, providing examples, each step in how you processed through from the devising phase to the production phase. **(12 marks)**

Description	Marks
Demonstrates clearly annotated development of design ideas and concepts, with clear explanation of design choices that reflect back to the design brief, showing a clear design process to a solution. • clear connection and flow between each image/sketch, while each concept relates back to the design intent or client need, showing progress to the final proposal. • illustrations show decisions made about parts or specific sections of the design, details about shape, dimensions, materials, colours and function. Annotations use appropriate engineering design terminology, explain adaptations of earlier concepts, and variations at each development stage: that is, the elements and principles of design.	11–12
Presents annotated development of design ideas and concepts relating to propose a solution to the design problem or situation. • each image or sketch has some relationship to the design intent or client need, showing progress to the final proposal. • some indication of decisions made about parts or specific sections of the design. Annotations explain adaptations of concepts, and variations at different stages.	9–10
Presents a progressive development of ideas and concepts, with some explanatory annotation. Some annotations explain the details of concept sketches.	7–8
Provides development of design ideas and sketches with limited annotations. Partially detailed sketches show design progress towards a solution.	5–6
Provides a collection of some annotated design ideas and concept sketches.	3–4
Shows a collection of isolated design ideas and sketches.	1–2
Total	**12**

3. Reflect on a product you designed and produced during this year; and the investigation of power sources, power supply and power used for your product. **(12 marks)**

(a) Describe the function of the product in terms of:

- meeting the functional requirements of the design brief
- variations and changes to the design.

(b) Evaluate the operation and consumption of supplied power of the product, and relationships between:

- energy
- power
- work

Description	Marks
Describes clearly and critically the functional operation of the product to meet requirements of the design brief, including critical variations and improved changes to the design	5–6
Describes the product operating to meet the functional requirements of the design brief	3–4
Provides evaluation of the product with little reference to the design brief	1–2
Total	**6**

Description	Marks
Describes clearly and critically the power source/s, and the selected power supply for the operation of the product, relating to energy, power and work to meet the functional requirements of the design brief.	5–6
Provides notes on the selected power supply for the product to meet the functional requirements of the design brief, with some definitions of energy, power and work.	3–4
Provides evaluation of the product's operation and power supply.	1–2
Total	**6**