



**B O A R D O F S T U D I E S**  
NEW SOUTH WALES

## **2010 HSC Industrial Technology Electronics Technologies Marking Guidelines**

### **Section I**

| <b>Question</b> | <b>Answer</b> |
|-----------------|---------------|
| 1               | B             |
| 2               | B             |
| 3               | C             |
| 4               | C             |
| 5               | A             |
| 6               | A             |
| 7               | A             |
| 8               | B             |
| 9               | D             |
| 10              | D             |

## Section II

### Question 11

| Criteria  | Marks |
|---|-------|
| • Provides a suitable description of the LDR function | 1     |

### Question 12

| Criteria   | Marks |
|--|-------|
| • Provides a correct description of why the switch is necessary                          | 2     |
| • Provides an incomplete or partially correct description of why the switch is necessary | 1     |

### Question 13

| Criteria  | Marks |
|---|-------|
| • Provides a correct summary of why digital simulation is a useful design tool                            | 2     |
| • Provides an incomplete or partially correct statement of why digital simulation is a useful design tool | 1     |

**Question 14**

| <b>Criteria</b>   | <b>Marks</b> |
|---|--------------|
| <ul style="list-style-type: none"><li>Provides characteristics and features of the different operating properties of bipolar and field effect transistors</li></ul> | 3            |
| <ul style="list-style-type: none"><li>Sketches in general terms the operating properties of bipolar or field effect transistors</li></ul>                           | 2            |
| <ul style="list-style-type: none"><li>Lists a feature of a bipolar or field effect transistor</li></ul>   | 1            |

**Question 15**

| <b>Criteria</b>  | <b>Marks</b> |
|--|--------------|
| <ul style="list-style-type: none"><li>Provides a correct answer (quantity and units) with a sequence of appropriate calculations</li></ul> | 3            |
| <ul style="list-style-type: none"><li>Provides an incorrect answer with ONE or TWO minor errors in calculations</li></ul>                  | 2            |
| <ul style="list-style-type: none"><li>Provides some evidence of which formulae to use</li></ul>  | 1            |

**Question 16**

| <b>Criteria</b>  | <b>Marks</b> |
|--|--------------|
| <ul style="list-style-type: none"><li>Provides an accurate circuit and provides why and/or how it operates</li></ul>   | 4            |
| <ul style="list-style-type: none"><li>Provides a partially correct circuit and provides characteristics and features of its operation</li></ul> OR <ul style="list-style-type: none"><li>Provides an accurate circuit and sketches in general terms a feature of its operation</li></ul> | 3            |
| <ul style="list-style-type: none"><li>Provides a partially correct circuit and sketches in general terms a feature of its operation</li></ul> OR <ul style="list-style-type: none"><li>Provides an accurate circuit</li></ul>  | 2            |
| <ul style="list-style-type: none"><li>Provides a partially correct circuit</li></ul> OR <ul style="list-style-type: none"><li>Sketches in general terms a circuit</li></ul>  | 1            |

### Section III

#### Question 17 (a)

| Criteria  | Marks |
|---|-------|
| • Sketches in general terms environmental factors which may impact on expansion | 3     |
| • Identifies environmental factors which may impact on expansion                | 2     |
| • Identifies an environmental factor which may impact on expansion              | 1     |

#### Question 17 (b)

| Criteria  | Marks |
|---|-------|
| • Analyses the relationships between the structural, technical and personnel issues that need to be considered prior to relocating          | 10–12 |
| • Shows the relationship between structural and technical OR structural and personnel OR technical and personnel issues prior to relocating | 7–9   |
| • Provides features of structural and technical OR structural and personnel OR technical and personnel issues                               | 4–6   |
| • Outlines the structural or technical or personnel issues  | 1–3   |

# Industrial Technology Electronics Technologies

## 2010 HSC Examination Mapping Grid

| Question           | Marks | Content   | Syllabus outcomes      |
|--------------------|-------|---|------------------------|
| <b>Section I</b>   |       |   |                        |
| 1                  | 1     | Electrical principles   | H4.3                   |
| 2                  | 1     | Components - ICs  | H4.3                   |
| 3                  | 1     | Components  | H4.3                   |
| 4                  | 1     | Components/output device  | H4.3                   |
| 5                  | 1     | Electrical principles/Graphic communication                                   | H3.1, H4.3             |
| 6                  | 1     | Components/output device  | H4.3, H6.1             |
| 7                  | 1     | Circuitry – current   | H3.1, H4.3, H6.1       |
| 8                  | 1     | Circuitry – capacitance   | H3.1, H4.3, H6.1       |
| 9                  | 1     | Circuitry – resistors   | H4.3, H6.1             |
| 10                 | 1     | Electrical principles/digital electronics                                     | H3.1, H4.3             |
| <b>Section II</b>  |       |   |                        |
| 11                 | 1     | Graphic communication/components  | H1.2, H3.1, H4.3       |
| 12                 | 2     | Graphic communication/components  | H1.2, H3.1, H4.3       |
| 13                 | 2     | Processes   | H1.2, H4.3, H6.1       |
| 14                 | 3     | Components – transistors  | H1.2, H4.3, H6.1       |
| 15                 | 3     | Circuitry   | H1.2, H3.1, H5.2       |
| 16                 | 4     | Graphic communication/components circuitry                                    | H1.2, H3.1, H4.3, H6.1 |
|                    |       |   |                        |
| <b>Section III</b> |       |   |                        |
| 17(a)              | 3     | Environmental and Sociological considerations                                 | H7.1, H1.1             |
| 17(b)              | 12    | Structural considerations, Technical considerations, Personnel considerations | H1.1, H7.1, H7.2       |