**Student name:………………………………………**

# Question 3

Use the corresponding numbers and letters in the table below to answer the question.

For each environmental condition listed, select a **conductor** and an **insulator** that would work best for that condition. Then give a reason for your selection.

*Please note, you can use the same conductor, insulator and reason more than once. You only need to choose* ***one*** *letter or number for* ***each*** *answer.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Condition** | **Conductor**  (insert number) | **Reason why conductor selected**  (insert letter) | **Insulator** (insert number) | **Reason why insulator selected**  (insert letter) |
| Heat |  |  |  |  |
| Moisture |  |  |  |  |
| Corrosive materials |  |  |  |  |
| Dust |  |  |  |  |
| Tension |  |  |  |  |
| Compression |  |  |  |  |
| Vibration |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Conductor/Insulator** |  | **Conductor/Insulator** |  | **Conductor/Insulator** |
| **1** | Copper | **7** | Brass | **13** | Glass |
| **2** | Silver | **8** | Gold | **14** | Mica |
| **3** | Aluminium | **9** | Lead | **15** | Oil |
| **4** | Tungsten | **10** | Tin | **16** | Ceramic porcelain |
| **5** | Carbon | **11** | Hard drawn copper | **17** | Hard rubber |
| **6** | Nichrome | **12** | Stranded copper | **18** | PVC |
|  | **Reason for selection** |  | **Reason for selection** |  | **Reason for selection** |
| **A** | High melting point | **E** | High tensile strength | **I** | Soft |
| **B** | Resistant to corrosion | **F** | Flexible | **J** | Crimping lugs and sleeves can be used |
| **C** | Resistant to oxidation | **G** | Withstand vibration | **K** | Can cope with compression |
| **D** | Unaffected by dust | **H** | Water resistant |  |  |

*(ER 1.3)*

© The Skills Organisation Incorporated 2018 NZ Certficate in Electrical Engineering Theory and Practice (Trade) (Level 4)