E10.1

UNIT E10 · WORKSHEET

Writing frames for practical work

UNIT PROGRESS

Core BUILD THE BASICS

C1 Use Frame 2 to write a test result for a fan controller where V_{in} was 0.9 V and the fan ran. **[2]**

C2 **State** the transistor switching voltage used in N5 questions. **[1]**

C3 **State** the three parts of an evaluation in Frame 3. **[1]**

C4 A frost alarm sounded when V_{in} was 0.75 V. **State** whether the transistor was on or off. **[1]**

C5 A night light stayed off with V_{in} = 0.4 V. **State** whether the transistor was on or off. **[1]**

C6 Use Frame 1 to write the expected results for a night light (LDR at the bottom) when it is dark. **[2]**

C7 Use Frame 2 to write a test result: the LDR was covered, V_{in} was 0.82 V and the lamp lit. **[2]**

Stretch GO FURTHER

S1 Specification: 'The alarm must sound below 2 °C.' In testing, it sounded at 5 °C. Use Frame 3 to evaluate. **[2]**

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S2 Use Frame 4 to suggest a modification for S1. **[2]**

S3 A test result says 'It worked.' **Describe** two things missing from it. **[2]**

S4 Spec: 'The fan must run above 30 °C.' In testing it ran at 24 °C. Use Frame 4 to suggest a modification. **[2]**

S5 **Describe** the operation of a fan controller (thermistor at the top) as the temperature rises. **[4]**

Exam Ready QUALIFICATIONS SCOTLAND STYLE

E1 **Explain** why a relay is used to switch a 12 V pump from a 6 V control circuit. **[1]**

E2 **Describe** the expected results for a frost alarm that should sound at 0 °C. **[2]**

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E3 **Describe** the operation of a frost alarm (thermistor at the bottom) as the temperature falls. **[4]**

E4 **Explain** why a variable resistor is used in place of a fixed resistor in a sensing circuit. **[1]**

Total: 30 marks. Use the Data Booklet. Show your working and give units.