UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

Creative Design & Innovation

Grade 10 ADV Sample Term 3 - Answer Key

Where student responses may vary please use your professional judgment. Be reasonable and award marks **ONLY** when deserved for answers given.

Marks will be awarded as indicated on the examination paper. Specific mark breakdowns for questions will be written when necessary.

Section 1 – Multiple Choice

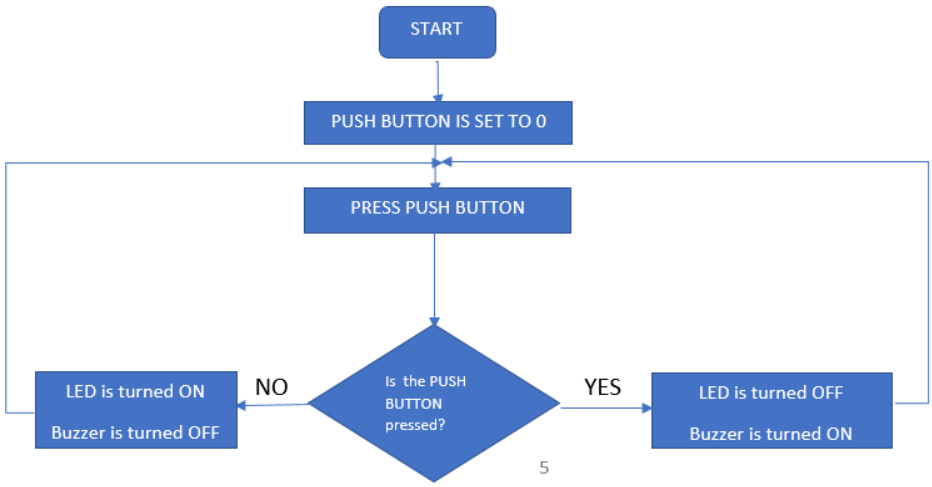
Question	Answer
1	A
2	C
3	C
4	C
5	B
6	B
7	D
8	C
9	B
10	B

Section 2 – True or False

Question	Answer
1	FALSE
2	TRUE
3	FALSE
4	TRUE
5	TRUE

Section 3 – Core content

Question	Answer
1 to 3 – SAQ	1. A **voltage source** causes a current to flow through the circuit. Example -Battery, any example the student provides where a current flow. 2. A **load** is an electrical device that consumes electrical power. Example – Lamp, any example that consumes electrical power. 3. A **conductive path** is the path through which the current flows. e.g. – wire.
4 - SAQ	ATM process – The ATM checks balance to see if funds available then deducts amount from balance.
5 – Matching	D E A C B
6 – Word bank	a – tolerance / b – digital / c – open / d – float / e – voltage / f – potentiometer / g – three / h – loop()
7 – Diagram	2 – USB jack / 4 – Reset button / 6 – power socket / 7 - analog socket / 8 - digital socket
6 – Calculations.	220 Ω = Red / Red / Black = 220 Ω (+/- 5%) 5% of 220 = 11 - 5% = 220 – 11 = 209 Ω / +5% = 220 + 11 = 231 Ω 220 Ω Range = 209 - 231 Ω 370 Ω = Orange / Violet / Black = 370 Ω (+ / - 10%) 10% of 370 = 37 -10% = 370 – 37 = 333 Ω / +10% = 370 +37 = 407 Ω 370 Ω Range = 333 Ω - 407 Ω

Section 4	
Question	Answer
1 – Flowchart **(10 marks)**	**<u>1 mark</u>** for each correct shape. **(6 marks)** **<u>1 mark</u>** for each flowline as listed. **(4 marks)** • flowline from the start to the first push button process. • flowline for Yes part. • flowline for No part • flowline to action decision from the second push button process. 
2 – Coding 1 mark an error 1 mark each correction **(10 marks)**	Line 1: int Brightness=0; Line 2: void setup() Line 6: void loop() Line 8: analogWrite(9,Brightness); Line 9: delay(100);
3 – Schematic **(15 marks)**	1 mark for each correct pin. **(4 marks)** 2 marks for labelling RGBs **(2 marks)** 1 mark for each labelled resistor. **(3 marks) R1 / R2 / R3** 1 mark for each correct component symbol. **(6 marks)** **<u>Values are not needed.</u>**