Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 10_Electricity

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Mark
	Answers will be credited according to candidate's deployment of knowledge and understanding of the material in relation to the qualities and skills outlined in the generic mark scheme. The indicative content below is not prescriptive and candidates are not required to include all the material which is indicated as relevant. Additional content included in the response must be scientific and relevant. • the batteries store energy as chemical energy • the energy is transferred to electrons to make them flow/move • the current is a flow of electrons • the electrons flow through the metal/filament • the electrons collide with the ions in the lattice • the collisions make the ions vibrate more • the increased vibrations makes the lattice/filament hotter • the heat energy is dissipated to the surroundings • the ions give out/emit light	**(6)**

Downloaded from www.merit-minds.com

Descriptor
• No rewardable material.
• Demonstrates elements of physics understanding, some of which is inaccurate. Understanding of scientific ideas lacks detail. (AO1) • Presents an explanation with some structure and coherence. (AO1)
• Demonstrates physics understanding, which is mostly relevant but may include some inaccuracies. Understanding of scientific ideas is not fully detailed and/or developed. (AO1) • Presents an explanation that has a structure which is mostly clear, coherent and logical. (AO1)
• Demonstrates accurate and relevant physics understanding throughout. Understanding of the scientific ideas is detailed and fully developed. (AO1) • Presents an explanation that has a well-developed structure which is clear, coherent and logical. (AO1)

Downloaded from www.merit-minds.com

Level	Mark	Additional Guidance	General additional guidance – the decision within levels Eg - At each level, as well as content, the scientific coherency of what is stated will help place the answer at the top, or the bottom, of that level.
	0	No rewardable material.	
Level 1	1–2	Additional guidance unlinked statements	Possible candidate responses Particles move through the wire Batteries store energy Lamp gives off heat
Level 2	3–4	Additional guidance Limited explanation **linking** facts about particles OR **linking** facts about energy transfers	Possible candidate responses Electrons move through the wire/lamp OR The particles moving in the wire are electrons OR Particles collide in the wire OR Chemical energy (stored) in battery OR Energy dissipated / {released as light or thermal} energy in surroundings OR Energy is transferred electrically (from battery to lamp)

Downloaded from www.merit-minds.com

Q2.

Question number	Answer	Mark
	D variable resistor Options A, B and C are all wrong identifications with both the circuit components shown	(1) AO1

Downloaded from www.merit-minds.com

Q3.

Question number	Answer	Additional guidance	Mark
i	Wire X .....earth.....(1) Wire Y .....live..... (1)	accept 'life'	(2) AO1

Question number	Answer	Additional guidance	Mark
ii	Component Z ....fuse..... (1)		(1) AO1

Downloaded from www.merit-minds.com

Q4.

Question	Answer	Mark
(i)	**A** earth ***B, C and D*** *would not help to protect from shock*	**(1)** **AO1.1**

Question	Answer	Additional guidance	Mark
(ii)	an explanation linking **two** from:	ignore references to p.d./voltage current is greater than fuse	**(2)** **AO1.1**
	if the current is too large (1) (fuse) melts/breaks (1) switches off (current/circuit) (1)	value/size/rating blows stops current OR stops flow of charge	

Downloaded from www.merit-minds.com

Q5.

Question number	Answer	Mark
	C ammeter in series with component, voltmeter in parallel Only option C is correct for both the ammeter and the voltmeter	**(1)** **AO1**

Downloaded from www.merit-minds.com

Q6.

Question number	Answer	Mark
	A electrons	**(1)**

Downloaded from www.merit-minds.com

Q7.

Question number	Answer	Mark
	D protons and neutrons	**(1)**

Downloaded from www.merit-minds.com

Q8.

Question	Answer	Mark
	The only correct answer is B ***A, C*** *and* ***D*** *are not correct because they do not add up to the current entering the junction AND they do not equal the current coming from the battery*	**(1)** **AO1.1**

Downloaded from www.merit-minds.com

Q9.

Question number	Answer	Additional guidance	Mark
(i)	**B** electrons A C and D are incorrect because they do not move through a conductor to create an electric current.		(1) **AO1**

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) (charge =) 0.21 x 300 evaluation (1) (charge =) 63 unit (1) coulombs	 award full marks for the correct answer without working independent mark C(oulombs) c As	(3) **AO2** **AO1**

Downloaded from www.merit-minds.com