

Practice Question Set For A-Level
Subject : Physics
Paper-1 Topic : 3_ElectricCircuits

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

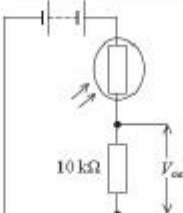
Q1.

Question Number	Acceptable Answer	Additional guidance	Mark
	D	the number density of the conduction electrons increases	(1)

Q2.

Question Number	Acceptable Answer	Additional guidance	Mark
	B	$V = \varepsilon - Ir$	(1)

Q3.

Question Number	Answers	Additional Guidance	Mark
	B		(1)

Q4.

Question Number	Acceptable Answer	Additional guidance	Mark
	B	1 : 4	(1)

Q5.

Question Number	Answer	Mark
	A amplitude of the vibrations of the lattice ions	1
	Incorrect Answers: B – the distance travelled by charge carriers between collisions will decrease if the temperature increases C – the drift velocity of conduction electrons will decrease if the temperature increases D – the number of conduction electrons per unit volume will remain constant if the temperature increases	

Q6.

Question Number	Acceptable Answer	Additional Guidance	Mark
	B		1

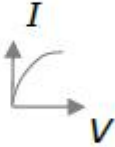
Q7.

Question Number	Answer	Mark
	C	1

Q8.

Question Number	Answer	Mark
	D $\frac{R_2}{R_1+R_2}V$	1
	Incorrect Answers: A – this looks similar to the correct formula but has an incorrect resistance as the numerator and does not have the total resistance as the denominator B – this looks similar to the correct formula with the correct resistance as the numerator but does not have the total resistance as the denominator C – This would give the PD across resistor R_1 and not R_2	

Q9.

Question Number	Acceptable answers	Additional guidance	Mark
	<p>The only correct answer is C</p> <p><i>A is not correct because it shows constant resistance</i></p> <p><i>B is not correct because it shows decreasing resistance</i></p> <p><i>D is not correct because it shows an I independent of V</i></p>		1

Q10.

Question Number	Acceptable answers	Additional guidance	Mark
	B		1

Q11.

Question Number	Answer	Additional Guidance	Mark
	B is the only correct answer	<p>A is incorrect because this does not give the correct ratio</p> <p>C is incorrect because this does not give the correct ratio</p> <p>D is incorrect because this does not give the correct ratio</p>	1

Q12.

Question Number	Answer	Mark
	B	1

Q13.

Question Number	Answer	Mark
	C	1

Q14.

Question Number	Answer	Mark
	A	1

Q15.

Question Number	Answer	Additional Guidance	Mark
	D is the only correct answer	A is incorrect because the time has not been converted to seconds B is incorrect because $Q = It$ and time has not been converted to seconds C is incorrect because $Q = It$	1

Q16.

Question Number	Acceptable answers	Additional guidance	Mark
	C		1

Q17.

Question Number	Acceptable Answer	Additional Guidance	Mark
	C		1

Q18.

Question Number	Answer	Mark
	C $v \propto \frac{1}{R}$	1
	A – this answer is incorrect B – this answer is incorrect D – this answer is incorrect	

Q19.

Question Number	Answer	Mark
	C	1

Q20.

Question Number	Answer	Mark
	B Equivalent $R = (1/R + 1/2R)^{-1}$	1
	Incorrect Answers: A – wrong expression C – wrong expression D – wrong expression	