Practice Question Set For A-Level
Subject : Physics
Paper-2 Topic : 5_Waves

Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Mark
	C	1

Q2.

Question Number	Acceptable Answers	Additional Guidance	Mark
	A		1

Q3.

Question Number	Answers	Mark
	The only correct answer is B ***A** is incorrect because amplitude does not affect the diffraction effect* ***C** is incorrect because frequency affects the wavelength and hence the diffraction effect* ***D** is incorrect because the speed of sound affects the wavelength and hence the diffraction effect*	1

Q4.

Question Number	Answer	Mark
	B – decreasing the speed of the electrons in the beam	1
	Incorrect Answers: A – the number of electrons does not affect the angle C - the number of electrons does not affect the angle D – increasing the speed would decrease the distance between the rings	

Q5.

Question Number	Answer	Mark
	D wavelength	**1**
	Incorrect Answers: A – determined from the maximum displacement on y-axis B – determined from 1/time for one cycle C – determined from the time for one cycle on x-axis	

Q6.

Question Number	Answer	Mark
	A $\frac{2\pi t}{T}$	**1**
	Incorrect Answers: B – no factor of 2 C – incorrect substitution of f D – incorrect substitution of f and no factor of 2	

Q7.

Question Number	Answer	Mark
	C	**1**

Q8.

Question Number	Acceptable answers	Additional guidance	Mark
	C		**1**

Q9.

Question Number	Acceptable Answers	Additional Guidance	Mark
	C		**1**

Q10.

Question Number	Answer	Mark
	D – increases non-linearly	**1**
	Incorrect Answers: A – incorrect as $f \propto \sqrt{T}$ B – incorrect as $f \propto \sqrt{T}$ C – incorrect as $f \propto \sqrt{T}$	

Q11.

Question Number	Answer	Mark
	A – amount of energy of a photon needed to release an electron	**1**
	Incorrect Answers: B- an electron does not release a photon C – reference to frequency incorrect D - reference to frequency incorrect and electron does not release a photon	

Q12.

Question Number	Answer	Mark
	B	1

Q13.

Question Number	Answer	Mark
	A	1

Q14.

Question Number	Answer	Mark
	C	1

Q15.

Question Number	Answer	Mark
	D	**1**
	Incorrect Answers: A – absorption of the longest wavelength B – emission with the longest wavelength C – absorption of the shortest wavelength	

Q16.

Question Number	Answer	Mark
	B ground state to level 2	**1**
	Incorrect Answers: A – incorrect change in energy C – incorrect change in energy and direction D – incorrect direction	

Q17.

Question Number	Answer	Mark
	D shortest arrow pointing to ground state	**1**
	Incorrect Answers: **A** – shortest wavelength absorbed **B** – longest wavelength absorbed **C** – shortest wavelength emitted	

Q18.

Question Number	Answer	Mark
	C - $\mu = \frac{1}{\text{gradient}}$	1
	Incorrect Answers: A – incorrect use of $v = \sqrt{\frac{T}{\mu}}$ B – incorrect use of $v = \sqrt{\frac{T}{\mu}}$ D - incorrect use of $v = \sqrt{\frac{T}{\mu}}$	

Q19.

Question Number	Answer	Mark
	C $\lambda = \frac{6.63 \times 10^{-34}}{9.11 \times 10^{-31} \times v}$	**1**
	Incorrect Answers: **A** Incorrect value for *h* **B** Incorrect arrangement and incorrect value for *h* **D** Incorrect arrangement	

Q20.

Question Number	Answer	Mark
	The only correct answer is A **B** *is not correct because* the equation is arranged incorrectly **C** *is not correct because* the equation is arranged incorrectly **D** *is not correct because* the equation is arranged incorrectly	**1**