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 $\frac{1}{5 \times 50 \times 10^{-6}}$	**1**
	A – incorrect calculation B– incorrect calculation D– incorrect calculation	

Q2.

Question Number	Answer	Mark
	C bright dark	**1**
	A - at 90° the lamp appears bright B - at 90° the lamp appears bright and at 180° the lamp appears dark D - at 180° the lamp appears dark	

Q3.

Question Number	Answer	Mark
	The only correct answer is B **A** *is not correct because* a real image is not formed on the same side of the lens to the object **C** *is not correct because* both comments incorrect **D** *is not correct because* a virtual image cannot be produced on a screen	**1**

Q4.

Question Number	Answer	Mark
	The only correct answer is B ***A** is not correct because this produces a beam of electrons with a shorter de Broglie wavelength, which produces a smaller angle of diffraction* ***C** is not correct because increasing the filament temperature would have no effect on the wavelength of the electron beam* ***D** is not correct because diffraction is maximised when the wavelength is similar to the gap size, increasing the gap size would decrease the angle of diffraction*	1

Q5.

Question Number	Answers	Mark
	The only correct answer is B ***A** is incorrect because the relative refractive index for light travelling from glass to water is required* ***C** is incorrect because the relative refractive index for light travelling from glass to water is required* ***D** is incorrect because the relative refractive index for light travelling from glass to water is required*	1

Q6.

Question Number	Answer	Mark
	A Using $n\lambda = d\sin\theta$ **Number of slits per mm in the diffraction grating** — **Wavelength of the light source** **Increased** — **Increased**	1
	Incorrect Answers: B – wavelength decreasing would cause *d* to decrease C – number of slits/mm decreasing would cause *d* to decrease D –both decreasing causes *d* to decrease	

Q7.

Question Number	Acceptable answer	Additional guidance	Mark
	B	The only correct answer is **B** because m is the SI unit for length. A is not correct because C is not a base unit C is not correct because g is not a base unit D is not correct because °C is not a base unit	1

Q8.

Question Number	Answer	Mark
	B $\frac{1}{\sin 35}$	1
	Incorrect Answers: A – incorrect arrangement of equation C – incorrect arrangement of equation D – incorrect arrangement of equation	

Q9.

Question Number	Answer	Mark
	C	1

Q10.

Question Number	Answer	Mark
	D	1

Q11.

Question Number	Answer	Mark
	C	1

Q12.

Question Number	Answer	Mark
	D – using laser light with a higher frequency	**1**
	Incorrect Answers: A – this would have no effect B – this would make the maxima further from the central maximum C – this would make the maxima further from the central maximum	

Q13.

Question Number	Answer	Mark
	D originate from one source	**1**
	Incorrect Answers: A – coherence requires a constant phase difference not necessarily 0 B – planes not relevant C – amplitude not relevant	

Q14.

Question Number	Answer	Mark
	B	**1**

Q15.

Question Number	Answer	Mark
	A	**1**

Q16.

Question Number	Answer	Mark
	B	**1**

Q17.

Question Number	Answer	Mark
	C	**1**

Q18.

Question Number	Answer	Mark
	C	1

Q19.

Question Number	Answer	Mark
	C increasing the length of the string	1
	Incorrect Answers: **A** results in a higher value for f **B** results in a higher value for f **D** results in a higher value for f	

Q20.

Question Number	Answer	Mark
	B	1