Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Waves (Standard Demand Questions)

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

Mark Schemes

Q1.

(a) **A** radio waves

B microwaves

C X-rays

*allow **1** mark if 2 correct*

2

(b) **Similarity**

any **one** from:
- same speed (in a vacuum)
- both transfer energy
- both transverse

allow both can travel through a vacuum
allow both are ionising
allow both can harm living tissue
allow both can be used for medical treatment / imaging

1

Difference

any **one** from:
- gamma has a higher frequency

  allow gamma has more energy
- gamma has a shorter wavelength
- gamma is more ionising
- gamma is more penetrating

1

(c) refraction

1

(d) wave speed = frequency × wavelength

or

$v = f \lambda$

1

(e) $3.0 \times 10^{8} = f \times 5.0 \times 10^{-7}$

1

$f = \frac{3.0 \times 10^8}{\quad}$

allow a correct rearrangement using incorrect powers of 10

1

$f = 6 \times 10^{14}$ (Hz)

allow a correct calculation of f using incorrect powers of 10
allow 6.0 × 10^14 (Hz)

1

[9]

Q2.

(a) **A** = rarefaction

1

B = wavelength

1

(b) f = 4000 Hz

1

$T = \frac{1}{4000}$

allow a correct substitution using an incorrectly / not converted value of f

1

T = 0.00025

allow a correct calculation using an incorrectly / not converted value of f

1

seconds **or** s

1

(c) wave speed = frequency × wavelength

or

$v = f \lambda$

1

(d) v = 348

allow a value in the range 347 to 348
subsequent marks may only be awarded if value for v is in the range 343 to 349

1

348 = 300 × λ

allow correct substitution using an incorrect value of v read from graph

1

$\lambda = \frac{348}{300}$

allow a correct rearrangement using an incorrect value of v read from graph

1

1.16 (m)

allow 1.2 (m)

allow a correct calculation using an incorrect value of v read from graph

*allow a maximum of **2** marks for use of v = 330 m/s*

1

[11]