Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: GCSE Triple Science_Waves (SDQ)

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Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

(a) (i) shorter than

1

(ii) increase slightly

1

(b) (i) go up in the same ratio
or (directly) proportional **or** as speed (of the tennis ball) increases so does the (difference in) frequency

accept as one goes up, so does the other

accept positive correlation

1

(ii) 20 (m/s)

*allow **1** mark for showing correct method on graph*
(ie horizontal or vertical line anywhere on graph)

if indicated by a cross, must be ± half square of correct value)

2

(iii) frequency and speed are both continuous variables

1

[6]

Q2.

(a) (i) silvered surfaces

more than the correct number of ticks in a row negates the mark

radiation

2

plastic cap

conduction, convection (both required)

	conduction	convection	radiation	
vacuum	✓	✓		
silvered surfaces			✓	(1)
plastic cap	✓	✓		(1)

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(ii)

any mention of air or any other substance in a vacuum scores zero

because there are no particles in a vacuum

accept atoms / molecules for particles

accept vacuum is empty space

accept there is nothing in a vacuum

accept there is no air / gas in the vacuum

conduction **and** convection need particles / medium

*need reference to both conduction **and** convection*

accept correct descriptions

2

(b) (i) less heat lost (to air above the heater)

*do **not** accept **no** heat lost*

light shiny surfaces are poor emitters (of radiation)

accept radiators for emitters
references to reflection are neutral

or dull, matt surfaces are good emitters (of radiation)

*do **not** credit answers which infer reflection from the underside of the hood*

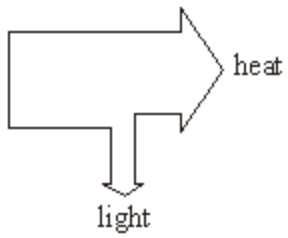
ignore correct reference to absorption

2

(ii) correct diagram drawn with one output arrow narrower than the other

ignore input

arrows correctly labelled with energy form
eg



flow charts score zero

2

(iii) energy cannot be destroyed

accept (principle of) conservation of energy

*do **not** accept because energy cannot be lost without clarification*

1

[9]

Q3.

(a) 20000

accept any unambiguous indication

1

(b) kilohertz

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credit misspellings
credit '1000 hertz' or '1000 Hz'
accept 1000 oscillations/beats/waves <u>per second</u>

1

(c) (i) cleaning (e.g. something delicate such as a watch)

***or** quality control/flaw detection*
credit any appropriate extra Specification response
e.g. sonar

1

(ii) pre-natal (scanning)

*do **not** credit just 'scanning'/medical scanning/ scanning a baby*
credit any appropriate extra Specification response
e.g. destruction of (kidney) stones or cleaning teeth

1

(d) 8 (μs)

1

(e) distance (1)

between the <u>boundary</u> and the detector (1)

accept 'between the <u>boundary</u> and the source'
accept any correct use of speed = distance/time

2

(f) examples

publish/tell doctors/the public (1) ... their evidence/results/research/data (1)

carry out more research/tests (1) ... to make sure/check reliability (1)

allow a wide variety of appropriate responses
valid point (1) appropriate example/qualification/expansion/etc. (1)
allow just 'stop using them/ultrasonic waves' (1)
allow using them (only) for industrial purposes (1)

2

[9]

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