

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Q1.

- (a) pitch 1
- loudness 1
- (b) (i) as length (of prongs) decreases frequency / pitch increases
accept converse
accept negative correlation
ignore inversely proportional 1
- (ii) 8.3 (cm)
accept 8.3 ± 0.1 cm 1
- (iii) (8.3 cm is) between 7.8 (cm) and 8.7 (cm)
ecf from part (ii) 1
- (so f must be) between 384 (Hz) and 480 (Hz) 1
- $410 \text{ (Hz)} \leq f \leq 450 \text{ (Hz)}$
if only the estimated frequency given, accept for 1 mark an answer within the range 1
- (c) (i) electronic 1
- (ii) frequency is (very) high
accept frequency above
20 000 (Hz) or audible range 1
- so tuning fork **or** length of prongs would be very small (1.2 mm) 1
- (d) 285.7 (Hz)
accept any correct rounding 286, 290, 300
allow 2 marks for 285
allow 2 marks for correct substitution $0.0035 = 1 / f$
allow 1 mark for $T = 0.0035$ s

Q2.

(a) potential

1

(b) (i) 13 200

allow 1 mark for correct substitution, ie 660×20 provided no subsequent step shown

2

(ii) 16.5

allow 1 mark for correct

or

their (b)(i)

800

correctly calculated

13 200

their (b)(i)

substitution, ie 800 or 800

provided no subsequent step shown

2

[5]