

Name of the Student: \_\_\_\_\_

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

**Q1.**

(a) B

*reason only scores if B is chosen*

1

gradient / slope is the steepest / steeper  
*answers must be comparative*  
*accept steepest line*  
*ignore greatest speed*

1

(b) (velocity includes) direction

*'it' refers to velocity*

1

[3]

**Q2.**

(a) 2.75

*allow 1 mark for correct substitution, ie  $\frac{11}{4}$*   
 *$\frac{23 - 12}{4}$*   
**or**  
*provided no subsequent step shown*

2

m/s<sup>2</sup>

1

(b) driving force increases

1

frictional force increases

*accept air resistance / drag for frictional force*

1

driving force > frictional force

1

[6]

**Q3.**

(a) method of suspending card through one hole

*e.g. supported pin / nail through hole*

1

use of plumb line suspended from same point as card

*term plumb line is not essential*

1

repeating for a second hole

1

*mark points can be scored from labelled diagram(s)*

*unlabelled diagram(s) alone score(s) a maximum of 1 mark*

(b) suspended card and plumb line from third hole and mark (new) line

*accept repeat experiment using the third hole*

1

if accurate 3 lines cross at same point

1

**or**

place card on finger (tip) (1)

*accept alternatives eg pin*

balances where lines cross (1)

*accept suspend card from point where lines cross*

*accept 'centre of mass' for where lines cross*

*'card balances' is insufficient*

[5]

#### **Q4.**

(a) (i) 16 000

*allow 1 mark for correct substitution ie  $3200 \times 5$*

2

(ii) 16 000 or their (a)(i)

1

(iii) less than

1

(b) increases

1

decreases

*correct order only*

1

[6]