

Forces & their effects/the solar system & beyond

7K & 7L

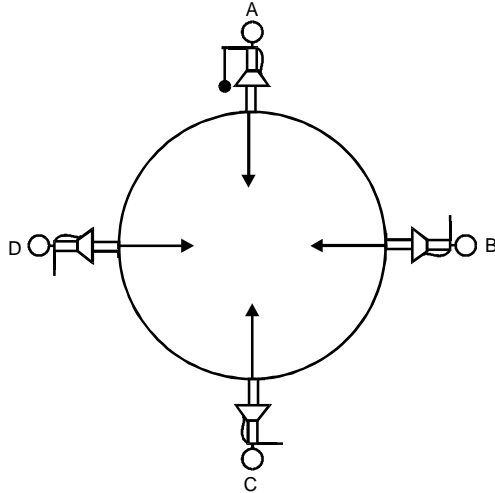
21 min

22 marks

Q1-L3, Q2-L4, Q3-L4, Q4-L5, Q5-5, Q6-L6

- | | | | | | |
|----|-----|------|---|--|------------|
| 1. | (a) | (i) | C | | 1 |
| | | (ii) | B | | 1 |
| | (b) | | 20 | | 1 |
| | (c) | | any one from | | 1 |
| | | | • friction | | |
| | | | • air resistance or drag | | |
| | | | • reaction | <i>accept 'upthrust'</i> | |
| | | | | <i>do not accept 'gravity'</i> | |
| | | | | | [4] |
| 2. | (a) | | The Moon is nearer to the Earth than the Sun is ✓ | <i>if more than one box is ticked, award no mark</i> | 1 |
| | (b) | (i) | 11.16 | <i>accept any number from 11.15 to 11.17</i> | 1 |
| | | (ii) | it decreased or went down | | 1 |
| | | | because the Moon blocked the Sun's heat or rays or radiation | <i>accept 'there was no sunlight to give heat'</i> | |
| | | | | <i>accept 'there was no Sun to make it warm'</i> | |
| | | | | <i>accept 'there was no heat from the Sun'</i> | |
| | | | | <i>accept 'there was no Sun'</i> | |
| | | | | <i>both the answer and the reason are required for the mark</i> | |
| | | | | <i>do not accept 'it blocked the Sun's light'</i> | |
| | | | | | [3] |

3. (a) (i) four arrows, all towards the centre of the Earth 1



all four arrows, correctly drawn, are required for the mark
the arrows may be drawn outside the Earth

- (ii) ball hanging towards the centre of the Earth at B, C and D 1

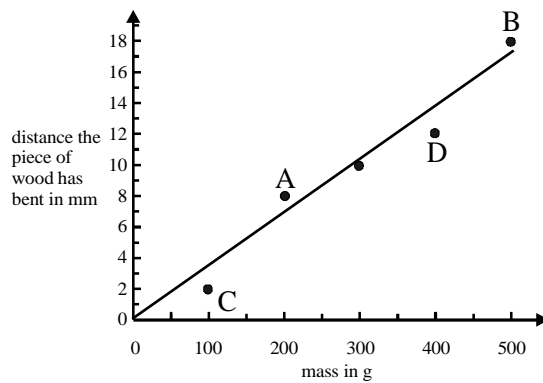
all three positions, B, C and D, are required for the mark

- (b) (i) 365 days *accept '365'* 1

- (ii) 24 hours *accept '24'* 1

[4]

4. (a) gravity **or** weight 1



- (b) (i) 1

*accept any straight line which goes through **or** below both points A and B and through **or** above both points C and D the line does **not** have to extend to an axis*

- (ii) 11.5 *accept any answer from 10.0 to 13.0* 1

[3]

5. (a) (i) any **one** from 1
- when the weight increases, the number of masses increases
accept 'they increase together' or 'they decrease together'
 - the number of masses goes down if the weight goes down
 - the number of masses increases with weight
- (ii) 12 1
- (b) (i) she would need fewer masses *accept 'it would slide more easily'* 1
do not accept 'less friction'
- (ii) put oil or water on the glass *accept a named lubricant for oil* 1
accept 'lubricate the surfaces'
accept 'polish the block of wood'
accept 'put the block of wood on rollers or ball bearings'
or on any objects used as rollers
do not accept 'tilt the glass'
- [4]
6. (a) He observed the environment. ✓ 1
if more than one box is ticked, award no mark
- (b) any **one** from 1
- data from further away can be collected *accept 'equipment can land on the planet'*
 - data from fainter objects **or** smaller details can be collected
 - data is clearer because there is no atmospheric distortion *accept 'telescopes can be sited outside Earth's atmosphere'*
 - more information is collected
 - more detailed **or** more accurate information
 - wider spectrum of information including photographs **or** pictures of planet
 - other radiation can be detected
- a mark may be awarded for a description of a specific way
information is different or a description of a specific way
previous limitations are reduced*
- (c) any **one** from 1
- our knowledge is increasing *accept 'we probably do not know everything about the solar system'*
 - our knowledge is changing

(d) any **one** from

- new evidence which challenges ideas may be collected
- there might be a new way of thinking about how the facts fit together
- new interpretations of evidence
- old ideas do not explain the observation

accept 'more observations'
accept 'new evidence'

*accept 'old ideas do not work **or** fit data'*

1

[4]