RECTILINEAR PROPAGATION OF LIGHT

1. Recliner property /light travels in a straight line;   (1mk)

2. (a)   (i)   B   1

            (ii)   any **one** from   1

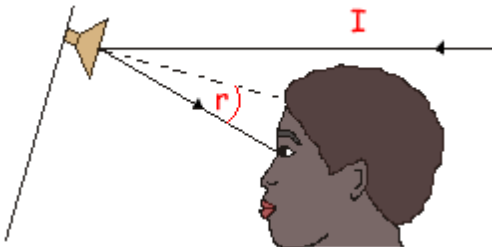   ·   light travels in straight lines

        ·   light will not pass through the cardboard

                    accept 'the cardboard blocks the light'
                    or 'the cardboard is opaque'

        ·   they are in the shadow of the cardboard

                    *do **not** accept 'they are in the shadow'*

      (b)   green   1
      (c)   Q   1
                                           [4]

3. Ans

    (i)   See diagram ✔✔

                                      (2 marks)

    (ii)   The normal ✔

                                        (1 mark)

4. ANS

(a)	**Lines**	(i)	Middle dot labelled Z	1
		(ii)	From Y continuing on left of mirror as if coming from their Z	2
			Straight line from their Z to Y only scores (1)	
(b)	**Incidence**	(i)	Show correct *i* and correct normal	1
	Reflection	(ii)	Show their correct *r*	1
(c)	**Image**		Virtual	1

(Total 6 marks)

5. (a) • 65   1 (L5)

it is different from the angle of incidence **or** all the others are the same

> *accept 'number 4' **or** 'the fourth'*
>
> *accept 'it is not 60°' **or** 'it should be 60°'*
>
> *accept 'the angle of reflection and the angle of incidence should be the same'*
>
> *accept 'it is 5° out'*
>
> *accept 'they are not the same'*
>
> ***both** the answer and the correct explanation are required for the mark*
>
> *award a mark for '60°' if the explanation is correct*
>
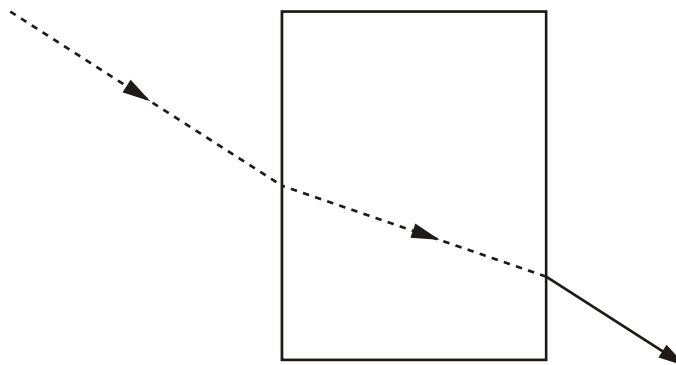> *'they go up in tens' is insufficient*
>
> *'it does not fit the pattern' is insufficient*

(b) (i) • a number from 30 to 32   1 (L5)

   (ii) • greater than   1 (L5)

> *accept 'greater' or 'bigger'*

(c)   1 (L6)

accept a continuous straight line that bends away from the normal

accept a line without an arrow

The ray need not be parallel to the incident ray

[4]

6. (a)   ray drawn from tooth to mirror to eye

1

angle I = angle R

judged by eye

1

at least one arrow in correct direction

*do **not** credit conflicting arrows*

1

*if no ruler used maximum mark is **2***
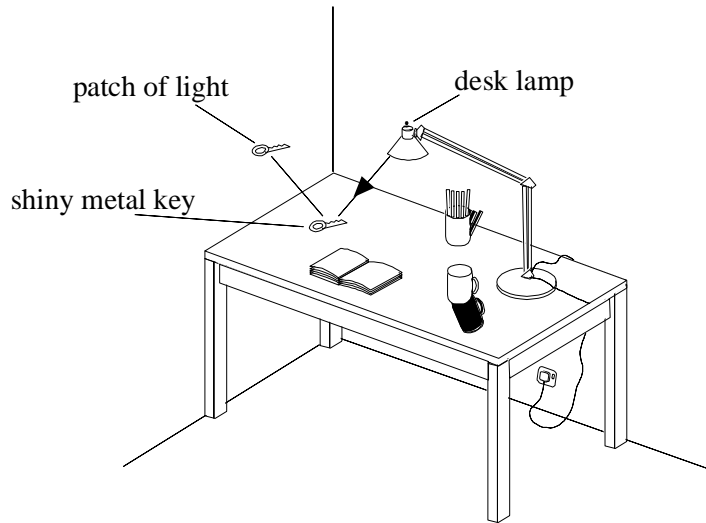
(b)   virtual

1

upright

1

[5]

7. (a) (i)   the first mark is for a continuous straight line from the rim of the lamp to the key 1

the line must reach the key

the second mark is for the arrow on the line   1

the arrow must point away from the lamp

(ii)   the mark is for a straight line from the key to the patch of light   1

the line must both touch the key and reach the patch of light

*do **not** accept broken lines*

accept the reflected ray drawn from any part of the key irrespective of the first ray

the reflected ray need not have an arrow

(b) any **one** from   1

· light cannot bend around the mug *accept 'light travels in straight lines'*

· light cannot go through the mug   *accept 'the mug absorbs **or** scatters the light'*

*or 'the mug is opaque' **or** 'the mug is in the way of the light'*

*do **not** accept 'light reflects off the mug'*

[4]