B

Planning sheet

Any work on this sheet will not be directly marked, but may be used to contribute to the examiner's understanding of your answer.

2 table lamps - lounge - 100 watts
2 bedside lights - bedroom - 60 watts

6 rooms 600 watts

less watts
less energy.

Average 22.5

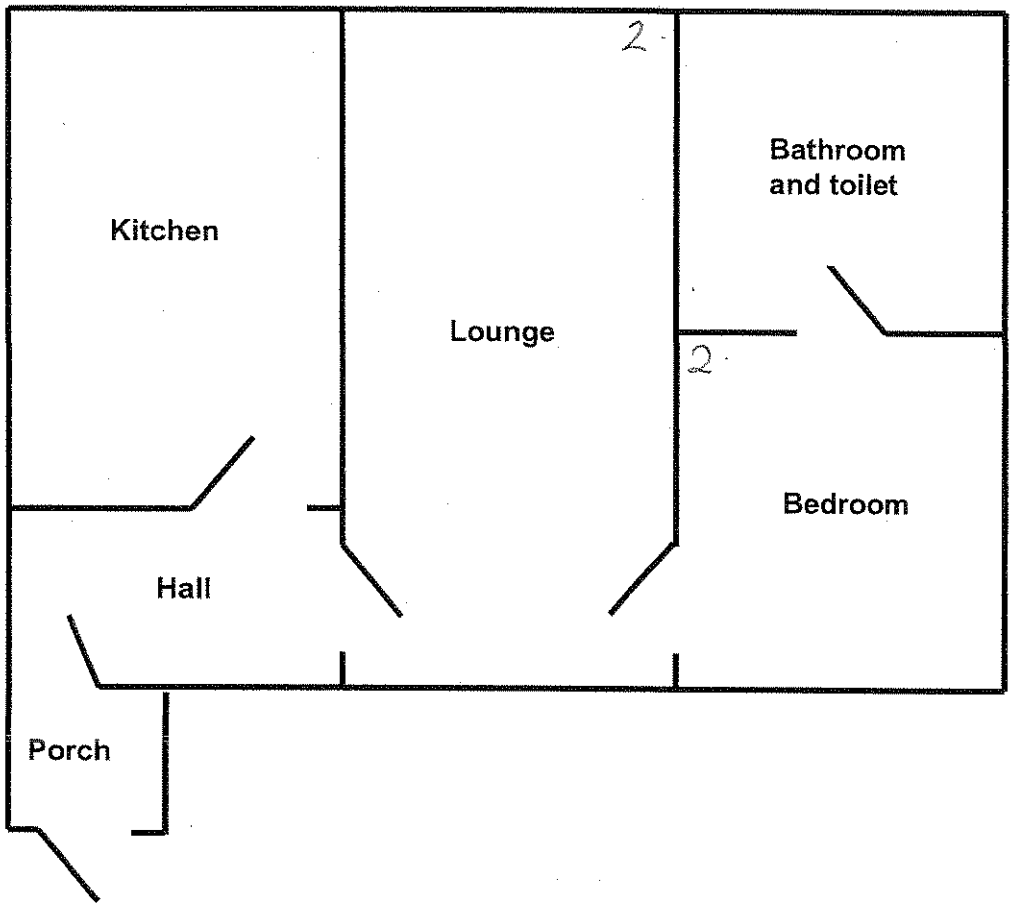
8 × 22.5 = 180 watts.

Average = 16.5 = 33

= 180 + 33 = 213.

Level 1 Task

When Emma goes to college, she is going to live in a student flat.
This is the floor plan of the flat.



Floor plan
NOT TO
SCALE

Each room and the porch have a centre light. There are two table lamps in the lounge and two bedside lights in the bedroom. All the bulbs in the flat are conventional light bulbs.

Emma plans to replace the conventional light bulbs with energy saving bulbs.

(a) Use the table to make a list of conventional bulbs that Emma needs for her flat.

Conventional bulb (Watts)	General use
40	Child's bedside light that might be left on at night.
60	Bedside reading light, wall light.
100	Table lamp, centre light
150	Large standard lamp.

- 6 rooms with Centre light = 600 watts.
- Lounge - 2 table lamps = 200 watts
- Bedroom - 2 bedside lights = 120 watts

[2]

This table shows the energy saving bulbs that can be used to replace conventional bulbs.

Conventional bulb (Watts)	Energy saving bulb (Watts)
40	10
60	15 - 18
100	20 - 25
150	32

(b) List the energy saving bulbs that Emma needs to replace her conventional bulbs.

- She needs ~~8~~ 8, 20-25 watt bulbs. (6 rooms + 2 table lamp).
- 2, 15-18 watt ~~both~~ bulbs (~~2 to~~ 2 bedside lights.

[2]

(c) Emma thinks that she can save over 700W of power by replacing the conventional bulbs with energy saving bulbs. Is she right?

~~Emma isn't correct because if you take an average of the~~

Emma is correct because if you add up the total in the conventional bulbs (920 watts) minus the total of watts in the energy saving (213) it comes to a total of 707 watts that you save.

I found this by taking an average in the energy saving.

- 8 x 22.5 = 180 watts (20 - 25) (Average it) (20 + 25 ÷ 2)
- 2 x 16.5 = 33 watts (15 - 18) (average it) (15 + 18 ÷ 2)

[12]

Credit will be given for well organised work, where you make clear the method and calculations you have used in your answers.