Oxford Cambridge and RSA

GCSE Physics A (Gateway)

J249/02 Physics A P5-P8 and P9 (Foundation Tier)

Question Set 11

1 (a) Lenses can be used to help people see clearly.

Fig. 1.1 is a diagram of a convex lens.

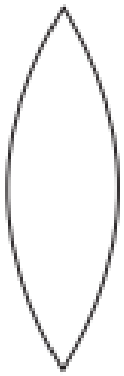

Fig. 1.1

(i) A student models the lens using two glass **prisms** and a glass **block**.

Complete the ray diagram **Fig. 1.2** to show how light rays travel through the model lens (glass prism and glass block).

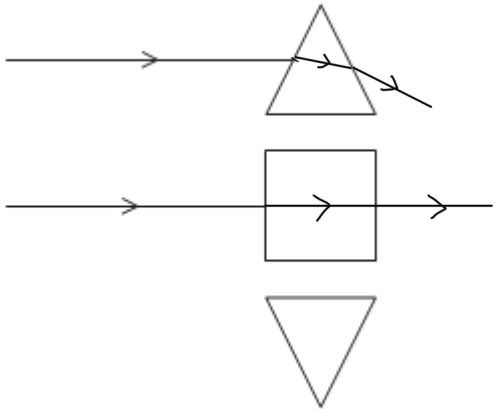

Fig. 1.2

[2]

(ii) Explain how a convex lens can correct long-sighted vision.

Use the model in **Fig. 1.2** to help you.

Having long-sighted vision means the person cannot see objects from far distance clearly. This is because the eye lens does not refract the parallel light enough that the focal point exist behind the retina. Hence convex lens can be placed in front of the eye to bend the light ray more and bring the focal point forward on the retina. **[2]**

(b) A student looks at coloured paper in different coloured light.

Fig. 1.3 is a diagram of her experiment.

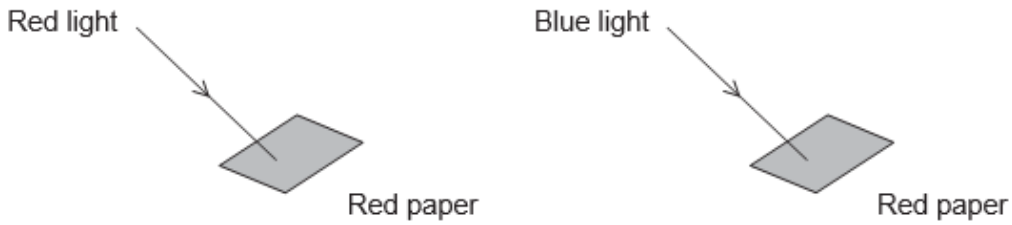

Fig. 1.3

She looks at red paper with red light. The paper appears red.

What colour does the red paper appear in blue light?

Explain your answer.

It would appear black as the blue light is absorbed by the red paper.

[2]

Total Marks for Question Set 11: 6