

CAMBRIDGE LOWER SECONDARY CHECKPOINT
PRACTICE QUESTIONS & MARK SCHEMES

Stage 8 / Subject: Physics

Topic: Light- Set-1

1

(a) Fig. 7.1 shows a ray of blue light shining onto a glass prism.

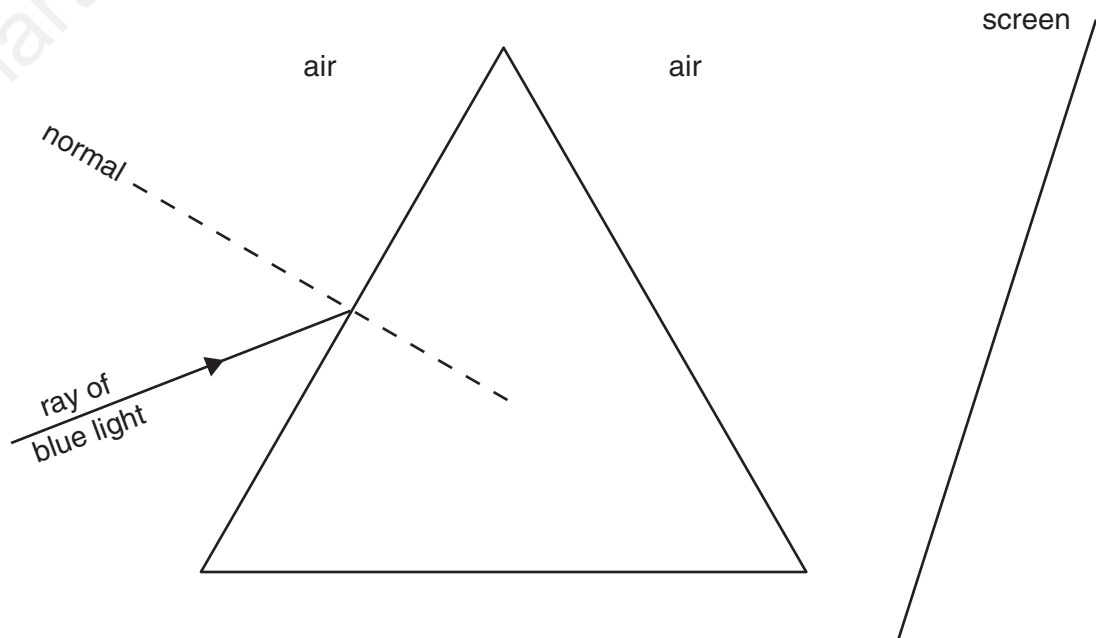


Fig. 7.1

With the aid of a straight edge, draw a possible path of the ray through the prism and into the air until it reaches the screen. [3]

(b) When a ray of white light passes through the prism, it spreads into a spectrum of colours that can be seen on the screen.

(i) What is the name of this spreading effect? Tick one box.

- convergence
- diffraction
- dispersion
- reflection [1]

(ii) Which colour is deviated least by the prism? [1]

(iii) Which colour is deviated most by the prism? [1]

MARKING SCHEME:

(a)	ray bent down at first surface	F	M1
	not below normal	F	A1
	ray bent down at second surface	C	B1
(b)	(i) dispersion ticked	F	B1
	(ii) red	C	B1
	(iii) violet	C	B1
	(allow B1,B0 if red and violet both written but interchanged)		6

2

A narrow beam of white light enters a glass prism and is split into the colours of the visible spectrum, as shown (not to scale) in Fig. 7.1.

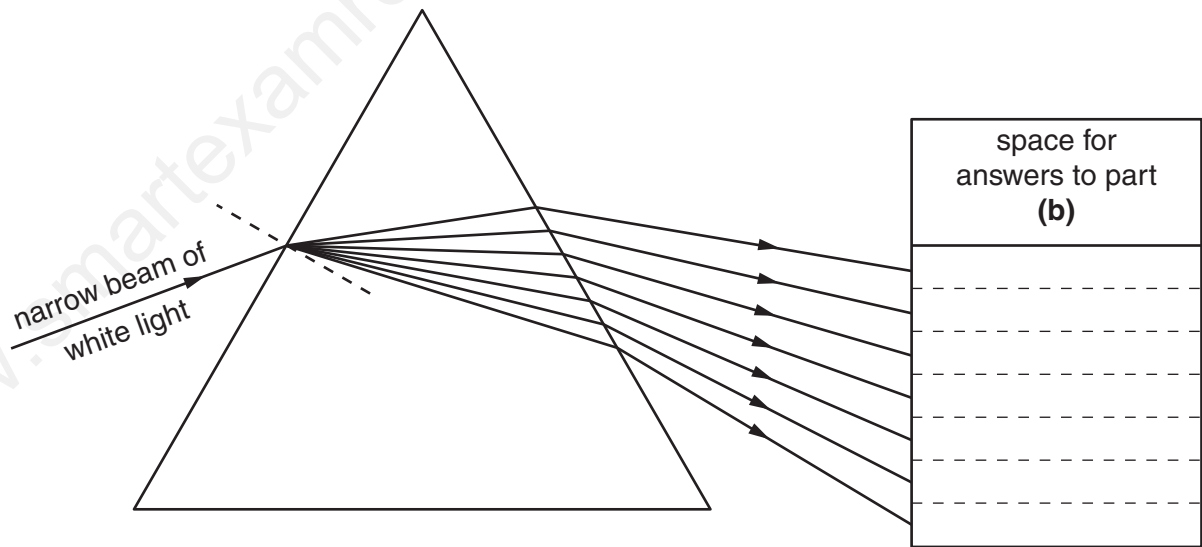


Fig. 7.1

(a) What name do we give to

(i) the bending of the light as it enters the prism,

.....

(ii) the different amounts of bending that give rise to the spectrum?

.....

[2]

(b) The lines leaving the prism represent rays of the seven main colours of the visible spectrum.

In the answer spaces provided on Fig. 7.1, write

(i) 'red' in the space alongside the red ray,

(ii) 'yellow' in the space alongside the yellow ray.

[2]

(c) The visible spectrum is part of the electromagnetic spectrum.

State two other types of radiation that are also part of the electromagnetic spectrum.

1.

2. [2]

[Total: 6]

MARKING SCHEME:

(a) (i) refraction B1

(ii) dispersion B1

(b)

red
yellow

B1

e.c.f. from red

B1

(c) any two from
gamma, cosmic, X-rays, UV, IR, microwaves, radio, TV
(ignore extras, unless wrong, in which case ✓ + × = 0)

B1 + B1

[Total: 6]

- 3** A ray of blue light is directed into a glass prism, as shown in Fig. 6.2.

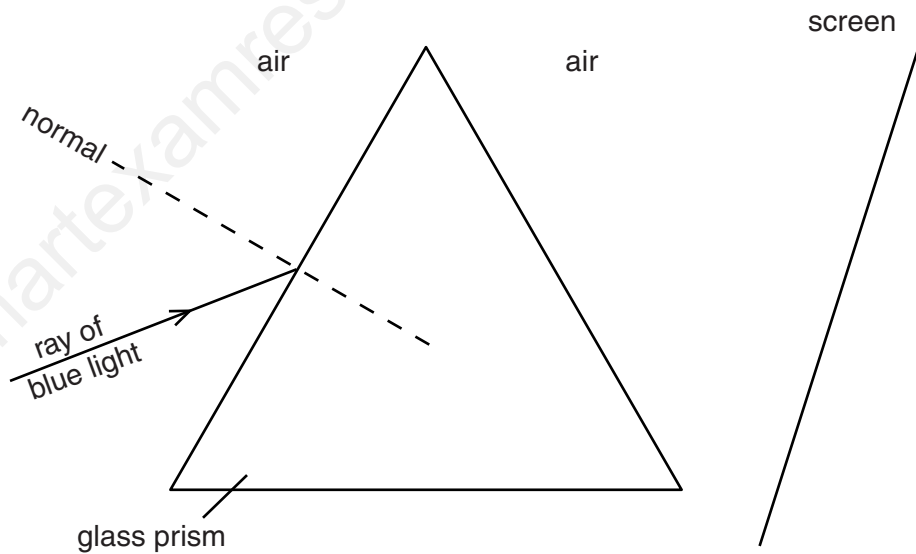


Fig. 6.2

- (i) Using your ruler, draw a possible path for the blue light, until it reaches the screen.
- (ii) The ray of blue light is replaced by a ray of red light.

On Fig. 6.2, mark an X to show where the red light might hit the screen.

[3]

MARKING SCHEME:

- (i) refracted down at first surface B1
refracted down at 2nd surface B1
- (ii) X marked above point where candidate's blue light hits screen B1

[Total: 5]